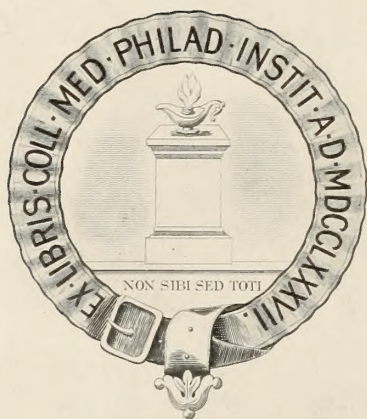


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CHARLES M. EDWARDS, M. D.,
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Original Communications.

SURGERY OF THE PANCREAS.*

By B. MERRILL RICKETTS, M. D., Cincinnati, Ohio.

Anatomy.—The pancreas is the most constant of all glands in mammals, birds, reptiles and most fish and insects. Its anatomical arrangement varies in each class of animal life. Its secretion is constant in herbivora, and larger and intermittent in carnivora.

It is situated in the duodenal cavity of mammals, most birds and reptiles. In mammals, the duct usually enters the intestine within two or three inches of the pylorus, while in dogs the pancreas is not connected with the duodenum.

In the dog, it is first in two parts; then it unites to form one gland and one duct to enter the intestines.

In the pig there is but one duct.

The blood supply in mammals is from the superior and inferior pancreatic-duodenal branches of the hepatic and superior mesenteric arteries. The venous blood passes through the splenic and mesentery veins.

The nerve supply is from the solar plexus.

Charniel, 1785, was one of the first to report anatomical observation upon the pancreas. Pflüger paid special attention to the nervous supply, and Benaut, 1880, wrote extensively upon the lympho-glandular structure of the pancreas of vertebrates. Steinhaus, 1891, contributed an exhaustive study of parasites of the pancreas in the amphibians, as did also Goppert during the same year. Francois-Franck, 1896, developed a series of experiments pertaining to the vasomotor enervation of the pancreas. There have been fifty-two contributions to this subject.

Abnormalities of the pancreas are quite frequent. There may be one or more accessory lobes; they may or may not be connected with

the pancreas proper. The pancreatic duct may have several bifurcations each entering the common duct or the intestinal tract at different points. Each accessory lobe may have its own duct to enter the pancreatic duct or the duodenum.

LeBlanc, 1842, wrote upon the analogies and differences found in the pancreas and salivary glands.

Lynch, 1852, reports a case of cancer of the liver; absence of the pancreas and almost complete occlusion of the duodenum.

Klob, 1859, could find no excretory duct in a pancreas coming under his observation. He thinks that accessory lobes are due to embryonic tissue. There has been no malignant disease of such lobes found on record.

Fry, 1881, records a case of dislocation and transformation of the pancreas.

There have been twenty-six contributions to this subject.

Physiological studies of the pancreas date from 1667, when it was believed to be influential in producing sugar in the urine.

Its physiology is not understood. It has some specific action upon the ferments, and its total extirpation is said to result in immediate death.

Rush, 1806, made an inquiry into the functions of the pancreas, spleen, liver and thyroid gland. Langley and Sewall, 1879, contributed their observations on the changes of pepsin-forming glands during secretion. Zawadzki, 1890, briefly considered the chemical composition of the pancreatic juice of man. Yablenski, 1895, mentions the activity of the pancreas under the influence of bread and milk diet. Hedon and Ville made experiments to determine the effects of digestion of fats when the pancreatic fluid is removed by fistula or by the extirpation of the gland.

There have been one hundred and three contributions to this subject.

*Original abstract of a paper read before Southern Surgical and Gynecological Association, at Columbia, S. C., February, 1903.

Experimental observations.—Wirsung, 1643, an anatomist of Padua, discovered the pancreatic duct and the fluid which flows through it.

DeGraaf, a pupil of Sylvius, of Leyden, 1664, made a pancreatic fistula and collected pancreatic fluid, using the quill of a wild duck as a canula. He opened the abdomen of a dog, and introduced the quill into the duct of Wirsung, collecting one ounce of pancreatic fluid in seven hours.

Brunner, 1682, holding a chair of medicine at Heidelberg, extirpated the pancreas from dogs. He states that the animals recovered from the operation without any noticeable after-effects. He conducted experiments in 1683 with reference to the arterial supply and secretion of the pancreas, and in 1688 confirmed these observations.

Baumont, 1830, experimented upon Alexis St. Martin, who had received a gun-shot wound in the stomach, resulting in an external fistula. Diakonoff, 1865, experimented with albuminous matter digested in pancreatic juice.

Arnozau and Vaillard ligated the pancreatic duct to observe its effects. Inoko, 1892, a Japanese surgeon, also ligated the pancreatic duct for the same purpose.

Dolinsky, 1894, stimulated the pancreatic secretion with a local application of acid.

Korte, 1896, experimented concerning fat necrosis, and the possibilities of its relief by surgical means.

Experiments have shown that pieces of pancreas transplanted under the skin will functionate and preserve life after complete excision of the pancreas; but when the grafted portion is completely excised (with the absence of the original pancreas) glycosuria will again appear.

There have been forty-three contributions to this subject.

Pathology.—The pancreas is subject to the same pathologic changes as other glandular tissues.

Abercrombie, 1824, contributed to the study of the pathologic changes of the stomach, pancreas and spleen, since which time there have been many contributions to the pathology of the spleen.

Lymphoma of the pancreas is exceedingly rare.

Lipoma is mentioned by Panarolus, involving the pancreas, in his *Iatrologismorum Roma*, 1652. He was rather explicit in his description of "lapidosum," and there can be but little, if

any, doubt as to the correctness of his statements concerning it.

Atrophy of the pancreas is rare. Gairdner, 1850, reported such a case, and Yeo, 1874, also records one.

Lumbricoids have been known to pass through the duct into the pancreas and cause obstruction, and subsequent trouble, or to die and cause infection, abscess, or cystic degeneration. Such a case is reported by Shea, 1881, and Nash, 1883.

Fungosities are indeed rare, if they are ever present. Norman, 1848, in reporting such a case, is meagre as to facts, and his diagnosis not well established.

There are ninety-five contributions to pathology proper, eight to lymphoma, lipoma, atrophy, lumbricoids, and fungosities.

Calculi are indeed quite frequently found within or without the pancreatic duct. They vary in size from a millet seed to several ounces in weight. They may be single or multiple, and composed principally of lime. They may cause obstruction of the duct by pressure, or pass into it and occlude it; or they may escape into the intestinal tract, rupture into the peritoneal cavity, stomach or gall bladder.

Moret, 1835, records a case of pancreatic calculus, and Clayton, 1849, one which ruptured into the abdominal cavity, causing death by internal hemorrhage.

Guignard, 1852, wrote concerning a treatment of pancreatic calculi, and Gailliard, 1880, found a calculus in the stomach that had escaped through a fistula (pancreatic-gastrique).

Weir, 1893, removed a pancreatic calculus by manipulation. It was impacted and associated with a pancreatic cyst.

There are twenty-seven contributions to this subject.

Cysts have been recognized for many years. They may be single and multilocular. They may contain blood, serum, pus or feces; the latter is sometimes found when the cyst ruptures into the intestine. The amount of fluid may vary from one drachm to several gallons, and they may be slow or rapid in their development.

Behn, 1730, endeavored to cure a pancreatic cyst by injecting a solution of nitrate of silver into the cyst.

Parsons, 1857, reports a case of pancreatic cyst due to obstruction of the duct.

Swain, 1893, records a case of pancreatic cyst with effusion into the lesser peritoneal cavity.

There have been one hundred and six contributions to this subject.

Hæmorrhage into the body of the pancreas is quite frequent, and may be due to trauma or pathologic changes; may be sudden or slow in development, and governed by the same principles as other cysts of the pancreas.

Lisianski, 1900, records a case of blood cyst of the pancreas.

There have been sixty-two contributions to this subject.

Abscess of the pancreas may be primary or secondary, usually secondary, single or multiple, and is governed by the same principals as other cysts of the pancreas.

Berrende, 1829, records an ulcer of the pancreas. Frison, 1875, records a case of pancreatic ulcer associated with icterus from retention of bile in a case of diabetes. Musser, 1885, and Daraignez, each record a case of pancreatic cyst due to thrombosis of the portal vein. Fowler, 1896, notes a case of suppurative pancreatitis and parapancreatic abscess; diagnosis made by exploratory abdominal section.

There have been thirty-one contributions to this subject.

Syphilis of the pancreas is uncommon. The pancreas seems to better resist attack of this disease than any of the secretory glands. The lesion may be localized or general, the tissues becoming hard. Gummata of the pancreas are amenable to syphilitic remedies, and are probably as greatly influenced by them as any other gland. Syphilitic disease of the pancreas is difficult to determine except by autopsy.

Huber, 1878, records a case of syphilis of the pancreas. Schlagenhauser, 1895, records a case of acquired gumma of the pancreas, and Lounin, 1900, one of hereditary syphilis of the pancreas.

There have been five contributions to this subject.

Tuberculosis of the pancreas is rare; may be primary or secondary; more frequently secondary. When primary, the source of infection is probably from the alimentary tract through the pancreatic duct. When secondary, it is usually from adjacent tissues. There may be one or more foci, and they may remain so, or unite to form one common cyst containing pus, serum, blood or caseous matter. The caseous deposits may undergo calcereous degeneration.

Martland, 1825, mentions a case of tuberculosis of the pancreas associated with tuberculosis of the liver.

There have been ten contributions to this subject.

Gangrene of the pancreas is infrequent. A part or all of the gland may be involved. It is due to injury, obstruction of the ducts, pressure from neoplasms or otherwise. It may be primary or secondary, usually secondary.

Mader, 1884, records a case of gangrene due to thrombosis.

Brennecke, 1898, records two cases of gangrenous pancreatitis, with disseminated fat necrosis.

There have been nine contributions to this subject.

Carcinoma of the pancreas is the most common form of cancer of the pancreas, and most frequently involves its head. It is of both primary and secondary origin; the stomach being frequently involved with either, owing to their intimate relation. Carcinoma is often associated with cysts of the pancreas. It is more frequent in the male. Fatty diarrhœa may indicate carcinoma of the pancreas.

Von Doevren, 1789, records a case of carcinoma of the pancreas.

There have been one hundred and forty-seven contributions to this subject.

Sarcoma of the pancreas is primary or secondary, usually primary, and generally involves the tail. It is oftentimes rapid in growth, and seldom undergoes cystic degeneration.

Paulicki, 1868, reports a case of primary sarcoma of the pancreas; Eldorado, 1900, and Jameson, 1902, each record a case of primary sarcoma of the pancreas.

There have been thirteen contributions to this subject.

Cancer.—Many of the cases of malignancy of the pancreas have not been classified, as they were recognized before Virchow classified malignant growths. Since then, however, there have been many cases reported which have not been properly classified.

There have been forty-four contributions to unclassified cancer.

Hernia of the pancreas usually results from penetrating wounds in the back. It may, however, be congenital. It becomes gangrenous as the result of strangulation, and may undergo spontaneous recovery. The strangulated portion has in a few instances been successfully removed by ligation or otherwise.

Labedoric, 1856, records a case of hernia.

Cecchini, 1886, records a case of congenital ectopia of the pancreas.

Pererira-Guimaraes, 1896, mentions a case of traumatic hernia of the pancreas.

There have been eight contributions to this subject.

Surgery—1856-1903.

Pancreatotomy, pancreatectomy, pancreopexy, pancreorrhaphy.

Pancreatotomy is done for the evacuation of all kinds of cysts, removal of foreign bodies or calculi, all kinds of neoplasms, malignant or benign; and ligation of the pancreatic arteries or ducts.

Zukowski, 1881, made a laparotomy for a pancreatic cyst, and Bozeman, the same year, removed a twenty-and-one-half-pound cyst of the pancreas in the same manner.

Tremaine, 1888, successfully removed a pancreatic cyst, preserving the life of the patient.

The trocar should never be used in pancreatic cysts except when the abdomen has been previously opened.

Pancreatectomy is the removal of a portion or all of the pancreas for hernia, gangrene, laceration or otherwise.

Berard and Colin, 1856, and Allen, 1876, each spoke of the possibilities of excision of the pancreas.

Lancereaux, 1891, made a complete ablation of the pancreas in a case of diabetes, and Hedon during the same year studied the effects upon the general nutrition after the extirpation of the pancreas.

Aldehoff, 1891, noted the effects of extirpation of the pancreas in cases of diabetes mellitus.

Gley, 1893, also noted the alterations caused by extirpation of the pancreas in diabetics.

Johansson, 1893, extirpated the pancreas, and Sandmeyer, 1894, made a partial extirpation of the pancreas.

Pancreopexy consists in fixing the pancreas, healthy or diseased, in its normal position or in the abdominal wall, for dislodgement, laceration, cysts, or otherwise.

Thoren, 1896, made a partial resection of a pancreatic cyst and sutured it in the wall of the abdomen.

The rule is to suture the wall of all pancreatic cysts for drainage; it is safer, easier, more quickly done, and attended with less mortality than excision of the sac.

Layne, 1902, opened the abdominal wall, incised that of the pancreatic cyst, drained and

sutured the wall of the cyst to that of the abdomen with recovery of the patient.

Pancreorrhaphy is suturing the pancreatic tissue for lacerated or incised wounds produced by accident or surgical operations. The suturing of walls of cysts to the abdominal wall is not properly included in this class.

There have been one hundred and twenty-three contributions to surgery of the pancreas, and two hundred and fifty-two contributions on general miscellaneous subjects pertaining to the surgery of the pancreas.

CONCLUSIONS.

1. The pancreas is constant in man, and a normal one is seldom in an abnormal position.
2. Its size, shape, number of lobes, bifurcations, ducts and their opening into the intestinal tract vary considerably.
3. Its physiology remains undetermined.
4. It is subject to about the same pathologic changes as other glands.
5. The presence of calculi demands exploration of the gland.
6. Small cysts of any character, and large ones, when pedunculated, should, as a rule, be extirpated.
7. Large cysts of any character, when not pedunculated, should be sutured to the abdominal wall and drained through it.
8. *Gummata* of the pancreas are amenable to syphilitic remedies.
9. *Tubercular* nodules should be excised.
10. *Gangrenous* portions of the pancreas can and should be removed.
11. *Neoplasms*, malignant or benign, should be extirpated.
12. A small portion of the pancreas will functionate enough to maintain life.
13. The entire gland should not be removed except in extreme cases of malignancy, when a piece of animal pancreas should be transplanted subcutaneously.
14. The efficacy of such a procedure is not certain.
15. Hernia of the pancreas, when gangrenous, should be amputated and sutured subcutaneously.
16. Incarcerated hernia, as a rule, should be left alone.
17. *Gun-shot*, lacerated and incised wounds of the pancreas should be packed, sutured, or vessels ligated, one or all, if necessary.
18. There are but a few of such cases in which

it might be necessary to suture the lacerated pancreas in the abdominal wall.

19. It is probable that when wounded posteriorly such will be necessary.

Fourth and Broadway.

CONCEPTION IN SPECIES, PREGNANCY, SEXUALITY, ETC.*

By JESSE EWELL, M. D., Ruckersville, Va.

The variety of pregnancy upon which I am expected to treat to-day applies to a pregnant woman; and is the result of sexual congress. In this act the spermatic fluid is poured out or ejaculated by the male organ within and around the cervix uteri in quantities varying from a few drops to a drachm or more. This spermatic fluid, or quickening venom, swarms with spermatozoa—bright, active little fellows, and enough of them at each ejaculation to form a standing army could each but meet with a female germ amid proper environments. But there is usually only one ovum to be fertilized, and this is accomplished by one spermatozoid, and the others failing in their mission, perish by the wayside.

It is a survival of the fittest, and the hustler gets there. The germ cell and the sperm cell unite, and a new life is formed. The ovum, with its germinal cell and germinal spot, is entered by the male germ, and by the process of cell division, growth at once begins. This is the origin of individual man, and a similar process is carried out both in animal and vegetable life. But the origin of our race is a question full of interest, and it might not be out of place just here to touch upon this subject.

We must agree that the various species of animals and plants, man included, originated independently of each other, by the supernatural process of divine creation, or we are compelled to accept the theory of descent in its entirety, and trace the human race with animals and plants from an entirely simple primeval parent form. First, a protoplast, then a cell, which evolves into the lowest form of vegetable or animal life, as the case may be. This improves, grows better as it grows older, and each succeeding gener-

ation is better than the preceding one, till finally after evolving through the lower forms of animal life, fishes, reptiles, birds, quadrupeds, apes and baboons, man stands at the head of animal life. But the very presence of matter clearly demonstrates the existence of a creator; while its combination, in all the various forms we find it, bespeaks the most infinite design; and this design can alone be formed and expressed by intelligence.

But when and by whom was matter created? Reason gives no answer, but revelation comes with that sublime assurance: "In the beginning God created the heaven and the earth."

Then upon the fifth day animal life is introduced. And God said: "Let the earth bring forth the living creature after his kind—cattle and creeping things, and beasts of the earth after his kind," and it was so.

On the sixth day God said: "Let us make man in our own image, after our likeness." And the Lord God formed man out of the dust of the earth, matter which previously existed, and to which He had previously given the power of imparting animal life; so man was a living creature before or at the time when God breathed into his nostrils the breath of life, and man became a living soul. Here we have a triune being—matter, animal life, derived from matter, and eternal life, the very breath of God Himself.

Of the fall in the garden of Eden there has been a new theory brought forward, and while I am not prepared to accept it, it is full of interest.

In the Mosaic history of creation a distinction is clearly drawn between cattle and creeping things, and the beasts of the earth; but all were placed under the dominion of man, and Adam gave names to them all. "And the serpent was more subtle than any of the beasts of the field." He was evidently then not a creeping thing, but one of good, intellectual faculties, and possessing articulate speech. And it is more than likely that he was fitted to perform the manual labor needed in keeping and dressing the garden of Eden; for labor was not yet imposed upon Adam, but came as the result of disobedience. Then when Adam and Eve, who had been given dominion over this animal, allowed him to become their counsellor, their social equal at least, the first sin had been committed; God was doubted, His orders set aside, and eating the forbidden fruit only followed in natural sequence.

The curse which God imposed upon the temp-

*Read before Piedmont Medical Society, at Orange, Va., December 20, 1902.

ter would imply that it had not been his habit to crawl upon his belly before that time; and it must also be noted that this curse was not entailed by divine command upon the seed of the serpent any more than was the condition of Adam, having lost one of his ribs, entailed upon his offspring. Adam was then the son of God, and so were all of his pure blood descendants, for Eve being formed from Adam, partook of his godly nature, and both parents possessing this soul element, must transmit it to their offspring. "Adam gave names to all the cattle, and to all the fowls of the air, and to every beast of the field." Observe the distinction between the cattle and the beast of the field. "Thou madest him to have dominion over the works of Thy hands, Thou puttest all things under his feet. All sheep and oxen—yea, and the beasts of the field." That is, even the beasts of the field, in contradistinction to sheep and oxen.

When Nineveh was threatened with destruction we read: "Let man and beast be covered with sack-cloth and cry mightily unto God, and turn every one from his evil way, and from the violence that is in their hands." Here we may infer that the beast was, in common with man, in the habit of wearing other clothing than that of sack-cloth; hence the wearing of sack-cloth was penance for both. We may further infer, if the beast could cry mightily to God, that he had articulate speech, and that he was capable of knowing right from wrong, and could repent and turn from the evil of his way, and from the violence that was in his hands. Hence the beast had hands.

When the law was being given from Mt. Sinai God said: "There shall not a hand touch it, but he shall be stoned or shot through; whether it be man or beast, he shall not live." Did these beasts have hands?

A beast, such as has been suggested, could only be found in the negro, and the law of God says: "Neither shall thou lie with any beast to defile thyself therewith. Neither shall any woman stand before a beast to lie down therewith; it is confusion." Here confusion, mixing and mingling, are synonymous terms. "But the sons of God (who partook of the godly nature of Adam) saw the daughters of men (by negresses) that they were fair, and they took of them wives of all which they choose." So when the world was well-nigh filled with mongrels, God said, "I will destroy man * * both man and beast, for it repenteth me that I have made them."

"But Noah found grace in the eyes of the Lord." Why? "Noah was a just man, and perfect in his generations." Then he was of pure Adamic stock.

It will be seen if the negro had no soul, that the soul element of Adamic man, failing to find a corresponding element in the negress, could not reproduce itself, and the offspring must be without a soul; the same thing occurs upon a union with white and half-breeds or quarter-breeds, and so on, even to the fiftieth or one hundredth generation. If either parent is lacking in the soul element, it cannot be begotten in the offspring.

This theorist also holds the idea that the so-called red, brown, and yellow races are only mongrels of various proportions of white blood and negro blood united. So much for the origin of man.

Here let us note that, whether right or wrong, the fact remains that education, elevation and advance of the negro are only stepping stones to amalgamation—the great bane of the South.

SYMPTOMS OF PREGNANCY.

I will touch only on a few points of symptomatology of pregnancy. Cessation of the menses usually first calls our attention to the pregnant state. It is said that all married women during their child-bearing period should be suspected of being pregnant. This is a wise saying, and will save us much trouble should we bear it in mind, and I would like to add, that many single women are not above suspicion: provided, circumstances justify suspicion. If the menses have ceased for two or three months, and the general health does not suffer, your case, to say the least, is a suspicious one. But never give a diagnosis in such a case till there is no possibility of error on your part. Such cases must have medicines, but remember the sportsman who shot so that if it was a deer he would hit it, but if it was a calf, he would miss it. Still you should make your diagnosis as soon as possible, and urge a speedy marriage; for marriage, like charity, covers a multitude of sins. As you value your soul, never yield to the oft-repeated importunity to murder the innocent, and do not become offended when the offer is made; for such offers come to us all.

Avoiding pregnancy in married life is one of the sins of our times, and like other sins, it carries its punishment with it. This unnatural sexual intercourse is unsatisfying to both man and woman, and there is much broken health,

broken tempers, ruined homes, and divorce suits to be charged to this desire not to have children. "Happy is the man that hath his quiver full of them; he shall not be ashamed, but shall speak with the enemies in the gate."

Is a physician ever justifiable in directing a woman how to avoid pregnancy? I have done so where I was sure the woman's health would greatly suffer from pregnancy, and where the offspring could only inherit a weakling's frame and vigor. Never give this secret to any but a good woman, and then pledge her to secrecy, pointing out the great harm to result from the common knowledge of such preventive measures.

The treatment of sterility is a subject that often comes before us. This may tax the skill of the gynecologist, and he, with all his knowledge of means and methods, may utterly fail. Sometimes this seems to result from want of sexuality on the part of the female. The uterus may be infantile, and the woman may be practically without sexual desires. If her general health is good, the husband, not the doctor, is the one to treat the case. Fondlings and manipulations should be judiciously practiced, and by a process of training the wife can be brought up in the way she should go. The mind will invite the blood current to these parts, and with increased function will come increased growth. The selfish husband, who does not ardently desire his wife to share fully in the ecstasy of the sexual act, makes but a poor teacher. The woman is usually in this act slower than the man, and if he only looks out for himself, she who should be his full partner in bliss is cheated and badly treated—is excited and not gratified. To her the marriage bed has no charms, for while he is sleeping soundly at her side, she is restless and uneasy, feeling that she has no part or lot in this matter. Still she must submit, and she knows that this is not fair treatment. But should this selfish husband awaken to a full sense of his duty, he will find there is nothing so sweet as duty well performed, and the ecstatic bliss of a dual organism will more than repay him for all his care and pains.

"Let us have 'Little Drops of Water,' " said a Sunday-school superintendent, when the singing was peculiarly listless, "and for goodness sake put some spirit into it!"

DISEASE OF THE ANTRUM OF HIGHMORE, AND ITS TREATMENT.*

By J. STIFF, M. D., D. D. S.,

Lecturer to the Mary Washington Hospital, Fredericksburg, Va.

The maxillary sinus is a large triangular shaped cavity hollowed out of the body of the superior maxillary bone; its apex directed outward is formed by the malar process; its base by the outer wall of the nose. Its walls are everywhere very thin, its roof being formed by the orbital plate, its floor by the alveolar process, its anterior wall by the facial, and its posterior by the zygomatic surface. Projecting into the floor of the antrum are several conical projections corresponding to the roots of the first and second molar teeth. Its base or inner wall presents a somewhat large, irregular aperture, which communicates with the nasal fossa. This opening is quite small in the recent state, varying from 4 to 8 millimeters in diameter. It is lined with the same character of epithelial membrane as that of the nasal passages, and is thereby subject to the same chances for inflammation and suppuration. This opening, though small, is quite sufficiently large to allow the free passage of air into and out of the cavity.

In looking at the *etiology* of antrum trouble, we should not fail to remember that not a few of the cases that come to us as practitioners may be traceable to some disease of the nasal parts. Let us, therefore, stick a peg here, and always inquire after the nose in searching for a cause of antral inflammation. Abscesses at the roots of teeth, periostitis, direct injury to the teeth themselves, and dental caries are given by most authorities as the causes of this disease. I am very much inclined to think, too, that the majority of dental practitioners are content to stop here, but they should not do so.

The rhinologists of to-day are not wrong by any means when they claim that quite a number of cases are due to affections of the nasal passages.

The question why is easily answered. Very naturally, or at least very probably, an inflammation existing along the nasal tract, if of much severity, and left untreated, will extend step by step until it finally involves the maxillary sinus.

There are cases on record in which antrum involvement resulted from attacks of la grippe when there were marked nasal symptoms. The

*Read before Rappahannock Valley Medical Society during its meeting at Fredericksburg, Va., December 28, 1902.

presence of polypi as well as trauma appear to sometimes be exciting causes.

Passing on to a consideration of the *symptoms*, it is well to remember that regardless of what may be the cause, the symptoms will most always be the same. Such as swelling of the overlying parts, pain having for its base the antrum, but radiating and extending in various directions, especially toward the nose. At times, or in some cases, a thin ring of the bone can be felt under pressure.

In making a *diagnosis*, first examine the nose and its passages; if there are no diseased conditions here, proceed with an examination of the teeth and surrounding parts. Take a mouth mirror or a physician's mirror for the throat and examine all the soft parts in the upper arch, and tap each tooth from before backward.

If you elicit any soreness whatever, stop and examine very carefully the gum which surrounds the tooth, and that which overlies the alveolar process. Pass your finger over the gum to see if the patient experiences any soreness. Always when you find a sore tooth it means that acute or subacute inflammation exists. It nearly always means, too, that that particular tooth has lost its vitality, or, in common parlance, the nerve or pulp is dead, and the decomposition which has resulted, producing putrid matter and noxious gases, have found their way through the apex of the root and disturbed the health and peace of the preidental membrane.

This accounts, therefore, for the soreness.

In passing, there is one point that should be remembered—viz., that no tooth ever abscesses at its root unless the nerve is dead. I think this is a rule without an exception. It is nearly always true, too, that teeth that elicit soreness on pressure and show signs of gum inflammation have an abscess at their root, either of an acute or subacute character.

If now you have located a sore tooth and associated with it the radiating pains in the malar region with more or less puffiness and soreness about the adjacent parts, you may be pretty sure that the sinus is diseased, and that the trouble this time is caused by the abscessed tooth which has discharged its contents into the cavity of the antrum.

I have seen pus in the antrum when there was very little tenderness produced by tapping the offending molar, but this was when the abscess was of long standing, in a chronic state. Usu-

ally, however, when a dead tooth is known to be the cause per se, and when the disease is seen in its infancy, there is always soreness connected with the tooth producing the disturbance.

When there are no dental symptoms to be found and the nasal passages are clear of disease, you may suspect a polypus or some form of tumor.

A history of gradual onset of the disease will lead you to confirm a diagnosis of tumor. Of course, disease resulting from fracture or trauma of any kind can be easily diagnosed by history of the case.

The treatment may be divided very properly into surgical and medical. The surgery should be performed by the dental surgeon, and the mechanical appliances which are necessary can best be made and adjusted by him. Therefore it is my opinion (speaking disinterestedly, gentlemen) that from the beginning of the treatment until his recovery the patient should be in the hands of the dental surgeon.

I would not have you think that I would throw a shadow over the province of the family physician, but, on the contrary, the patient should be under his tender care and treatment at the same time in order that the proper remedial agents be given to restore the system to its best possible vitality; for in nearly all these cases there is a lowered condition of the general health. If pus exists in the antrum, it must be evacuated.

There is a neat little point to be remembered in diagnosing the presence of pus. At times the cavity is laden with pyogenic matter, and it will not flow out through the artificial opening made in the floor of the sinus, in which case cause the patient to lie down, placing the affected side next the pillow. After waiting some length of time in this position pus, if it is present in any considerable quantity, may be detected at the posterior nares.

Proceed at once, after diagnosis, to make an opening by extracting the offending molar, and boring into the cavity formed by the socket of the palatine root. Sometimes this root has pierced the antrum, in which it is only necessary to enlarge the opening already made. Be sure to make your opening sufficiently large to exhaust all the septic matter and drain effectually. Besides, this permanent drainage must be established and maintained until the patient has completely recovered. This can be effected by one

of several mechanical appliances, but as I do not wish to occupy too much time, I shall mention the most important ones, and briefly.

Crown or band the teeth on either side of the opening, make a vulcanite or gold plate to cover the space between the teeth, then attach the crowns to the plate. Make an opening through the plate at a point opposite the opening into the antrum. In the opening fit a gold tube and attach it, allowing it to extend up to and even with the floor of the antrum. If it is allowed to extend further, it falls short of its proper mission—i. e., the drainage of all the pus and fluid elements from the cavity. Cement the crowns to the teeth and leave the appliance as a fixture until a complete recovery of the patient.

Always after syringing out the antrum, see that the opening in the tube is in some way closed, and kept closed. I have known a patient to suffer with a considerable stomach disturbance just because the pus was allowed to ooze out during the interim of treatment and gradually find its way to the stomach. This was due to a faulty conception of the proper manner of treating this important disease.

Another valuable appliance is constructed in similar manner to the foregoing, except that the plate is a removable one, and the tube is permanently filled with vulcanized rubber.

The patient should be seen daily, and the antrum syringed out with antiseptic solutions, such as borolyptol, Wampole's antiseptic solution, and such like. Do not use peroxide of hydrogen in your first injections, since the foaming and bubbling that takes place in the presence of large quantities of pus is very often annoying to the patient, forcing the fluid both through the opening into the mouth and also into the nose through the natural opening. As your last injection, use saline solutions. As the patient improves, the flow of pus lessens, and all the general symptoms subside, the number of treatments may be diminished.

After all symptoms of disease have vanished you may remove the mechanical appliance, and the opening in the antrum allowed to heal by granulation. As heretofore stated, the general health of the patient must be cared for—giving tonics and restoratives when indicated, and a most wholesome, nutritive diet prescribed.

ECONOMIC AND PHILANTHROPIC NEED OF STATE SANATORIA FOR TUBERCULOSIS IN THE SOUTH.*

By W. H. PRIOLEAU, M. D., Asheville, N. C.

The territory covered by this paper embraces Virginia, North Carolina, South Carolina, Georgia and Florida. A great deal that is said, however, can be applied to the greater part of the United States. Unfortunately, practically no vital statistics in this section are kept except in a few of the larger cities or towns. So for making comparisons and drawing conclusions, information has been gotten from wherever it could, most of it being taken from the United States census of 1900.

The first important point is that no vital statistics are kept by these States. It is only from statistics that we can prove a statement; if none are kept, much valuable information is lost that can never be regained.

In 1900 the population and deaths in the States named were as follows:

POPULATION IN 1900.			
	WHITE.	COLORED.	TOTAL.
Virginia	1,192,855	660,722	1,853,577
North Carolina ..	1,263,603	624,469	1,888,072
South Carolina ..	557,603	782,321	1,340,128
Georgia	1,181,294	1,034,813	2,216,107
Florida	297,333	230,720	528,063
Grand totals ..	4,492,892	3,333,055	7,825,947

DEATHS IN 1900.			
	WHITE.	COLORED.	TOTAL.
Virginia	14,070	11,182	25,252
North Carolina	13,217	7,851	21,068
South Carolina	5,808	11,358	17,166
Georgia	12,094	13,847	26,941
Florida	3,408	3,074	6,482
Grand totals	49,597	47,312	96,909

Here we have a combined population of 7,825,947, and not one State institution where a person suffering from tuberculosis could receive free treatment. And of this 7,825,947, 11,524 contract the disease and die from it. Besides this, at least 33 per cent. contract tuberculosis some time in their lives and recover. This does not include the great number who are annually cured in private sanatoria and elsewhere. In Charleston, S. C., where the population is 24,335 whites, 31,522 colored, during 1900 there were among the whites 484 deaths, 40 of these, or one-twelfth, being from tuberculosis. Among the negroes there were 1,242 deaths, 194, or a

*Original abstract of a paper read before the Tri-State Medical Association of Virginia and the Carolinas, held at Columbia, S. C., February 25th, 1903.

little more than one-sixth, being due to tuberculosis.

If we assume that the percentage of deaths from tuberculosis in Charleston would hold good throughout the South Atlantic States, then there died in 1900 from that disease in—

	WHITE.	COLORED.	TOTAL.
Virginia	1,172	1,147	2,919
North Carolina	1,101	1,227	2,328
South Carolina	484	1,775	2,259
Georgia	1,091	2,164	3,255
Florida	283	480	763
Grand totals	4,131	7,393	11,524

It is reasonable to suppose that of the 11,524 who die annually, the greater portion are the poor, who cannot pay for sanatorium treatment, and who finally enter our city hospitals and county homes to end their days.

Knopf (*Twentieth Century Practice*) estimates that in sanatoria at least 60 per cent. of tuberculosis cases are cured. Other authorities place the number of cures at a higher percentage. From the 1901-1902 report of the Massachusetts State Sanatorium at Rutland, I quote the following:

Number of arrested cases.....	46.63
Number of improved cases.....	41.95
Number not improved.....	11.39

An "arrested case" is so called until one or two years after the patient leaves the sanatorium; then if there is no return of the disease, the case is recorded as cured.

If, instead of allowing 11,524 persons to die annually we were to erect sanatoria and save the lives of 60 per cent. of that number, we would have a death rate from tuberculosis of 4,610, and we would return to the States as useful citizens 6,914. A poor consumptive untreated is a burden on the community in which he lives. If we treated the tuberculosis poor scientifically and saved 60 per cent., we would not only have saved that many lives, but we would have saved our State the cost of supporting that 60 per cent. for the duration of their illnesses in the county hospitals, which may be five months or five years. Knopf (*Jour. Amer. Med. Assn.*, November, 1902), says that the average stay of a tuberculosis patient in an ordinary city hospital is twelve months, while the average stay of such a patient in a sanatorium is about seven and one-half months. In the Massachusetts State Hospital for Tuberculosis, the average length of stay of 131 cases was six months. In the South, where climatic advantages are so

good, a safe estimate as to the length of stay would be six months. The cost per patient per day would not exceed one dollar; this I gather from other institutions and hospitals, and believe in the South it could be reduced to 50 cents per patient—provided, a truck farm, dairy and hennery be connected with the sanatorium: and provided, also, that the convalescents attend to some of this work.

The South Atlantic States are ideally situated for the establishing of tuberculosis sanatoria. All of them, except Florida, touch the great Appalachian range of mountains; and it is just in these mountains that the sanatoria should be established. Florida would have to build hers in the high, dry pineland region, which is the next best location after the mountains. All of these States have a mild, temperate climate the greater part of the year, thus enabling patients to live out of doors most of the time. From an economic standpoint, the mild climate and truck farming can be carried on the greater part of the year. Grazing for the cattle is also plentiful for at least eight months out of the year.

The site chosen for the sanatorium, if possible, should have an elevation of about 2,000 feet, and be protected from the north winds. The land connected with it should be fertile and sufficient for a truck farm; a supply of good water is absolutely necessary.

A plan for a sanatorium which would be inexpensive and yet capable of producing results as good as a more expensive building, would be the following: First, a two-story administration building for the officers, officers' quarters, dining room, reading room, etc. Then connected with this building, by covered corridors, small tent-houses or cottages scattered over the grounds. Craig (*Amer. Med. Jour.*, October, 1902,) describes such a tent as follows: "The patient should have a good tent-house about 18x20 feet in size, which can easily be partitioned, making two good-sized rooms. This tent should be boarded up about three feet from the ground, and have a tight floor. A fly should be stretched over it in order to protect it from rain and the direct heat of the sun. The sides should be detachable so that they can be raised and lowered, something like awnings, to allow the best ventilation."

Pure air and good food are essentials in the treatment of tuberculosis; and in the sanatorium the most expensive item would be food. How-

ever, with a dairy, a hennery, and a farm capable of producing sufficient food for the sanatorium, this expense will be greatly reduced.

As great as is a State's duty to the poor and sick, greater still is her duty to the larger number who are well. She should remove the sick to an institution from which infection cannot be spread. In bringing as many consumptives together as possible, we not only effect 60 per cent. of cures, but we protect those left at home. Every consumptive, ignorant of the infectious nature of his disease, should be looked upon as a dangerous person to the community in which he lives, except he lived in a sanatorium. He would be equally dangerous there if it were not that the rules are rigid as regards the disposal of sputa, and if precautions were not taken to disinfect where possible and to render everything aseptic. Tuberculosis contracted in a sanatorium is rarely, if ever, seen, but cases of tuberculosis directly traceable to an infected house or person are common.

As economists, besides protecting the well, it will cost the State less to care for a patient for six or seven months, who in the end will again enter the ranks of wage-earner, than to allow him to go to a city hospital or county home, with the positive assurance, "that he who enters here leaves all hope behind." A tuberculosis case almost never gets well under the ordinary hospital regime. He may, and frequently does, improve, but if he improve enough to leave the hospital, he will soon return to die in that institution.

As philanthropists, it is our duty (1) to look after this class of patients, to whom so many places refuse admittance; (2) to place these unfortunates in such an institution where the greater portion of those who enter will return to the world to work and become useful citizens; (3) to educate by means of sanatoria those who apply for treatment, and to return them to their homes as instructors in the right way to live, so as to teach others to avoid tuberculosis.

As medical men, it is our duty to check and prevent tuberculosis—(1) by persuading well-to-do patients to go to sanatoria; to live a sanatorium life at a resort for tuberculosis, or to live a sanatorium life at home; (2) by urging our respective Legislatures, through our medical societies, to establish State sanatoria for the tuberculous poor.

SYPHILIS OF THE NERVOUS SYSTEM.*

By F. E. COULTER, M. D., Omaha, Nebraska.

Statistics show that at least one in every seven infected by syphilis develops some nervous lesion. Syphilis too often remains unrecognized until the period for its relief is past, for this is one of the diseases that is most successfully treated in the early stage; hence an early recognition is absolutely essential to the successful management. In order to diagnose this disease readily, it is necessary to become familiar with the symptoms presented. The theory is held that the disease is due to micro-organism. Gowers stated that no patient can be absolutely free from syphilis unless he never was exposed. The initial lesion of syphilis is very readily overlooked, and many patients state what they believe to be the truth when they tell us they have never been infected.

A number of contributing factors serve to hasten and bring to the surface, as it were, syphilitic manifestations; of these, trauma, mental and physical over-exertion, sexual excess, strong emotions, alcoholism and exposure, are the most prominent.

The entire manifestations of this disease are divided into two classes—*specific*, which are the early ones usually, and *para-syphilitic*, or the later. About 44 per cent. of all syphilitic intracranial lesions develop within the first three years after infection, and about 59 per cent. within the first five years. Many of the cord lesions make their appearance during the early period mentioned. The *para-syphilitic* manifestations become apparent usually not before 6 to 10 years after the original infection, but may appear at a much later period.

The early manifestations are vascular lesions, endarteritis, thrombosis, also gummatous formations, meningo-encephalic inflammations, etc.; we may find a rare form of waxy degeneration of the middle coat of the arteries. Atheroma may be of a syphilitic nature or may not. The *para-syphilitic* manifestations are represented by general paralysis of the insane in the encephalon, and posterior sclerosis in the cord, or a combination of both in rare instances.

One of the chief vascular alterations found among the early symptoms is obliterating endarteritis. Any of the cord or intra-cranial arteries may be the seat of this alteration, but the

*Original synopsis of a paper read before the meeting of the Missouri Valley Medical Association, held at Council Bluffs, Iowa, March, 1903.

basilar, mid-cerebrals and vertebrals are most likely to suffer; the symptoms, of course, following depend on the artery involved. Gummata may be found either on the vertex or the base, or both; very seldom in the interior. They may be diffuse or circumscribed, single or multiple.

Under the head of symptoms produced by specific vascular lesions, the statement is made that they are not essentially different from those produced by any other like lesion—that is, a thrombosis due to syphilis is not essentially different from a thrombosis due to some other cause, granted that in both instances it is complete; but it is characteristic of syphilitic lesions that they are not complete, especially in the beginning.

The following rules will assist in diagnosing a syphilitic from a non-syphilitic lesion: In the former there is a peculiar association or succession of symptoms that indicate a double or multiple lesion; there is a most unusual tendency to remissions and relapses; then the onset of the case is usually sudden rather than acute; and again, the symptoms resolve rapidly under appropriate treatment, usually but not always; this depends upon the stage when seen and extent of injury already present.

The most frequent vascular lesion is found in thrombosis, and great care should be exercised in the differential diagnosis between this condition and hemorrhage, because the treatment, if successful, of the two conditions is very different. Partial lesions are frequent, and account for the transient symptoms, such as a hemiplegia that recovers fairly well, verbal amnesia, parasesthesia, lapses of consciousness that are fleeting, temporary mental confusions, etc. These conditions are often preceded by a warning, headache, vertigo, numbness and weakness. At this point is reported a case illustrative of the effect of appropriate treatment when early applied to these conditions.

A fugative paralysis of some of the extrinsic eye muscles is often present, also the Argyle-Robertson pupil, and pupils with irregular borders. The ophthalmoscope is of much importance, as it reveals alterations in the fundus in about 40 per cent. of all cases. Hemorrhage and embolism do not frequently occur as the result of syphilis.

As to *prognosis*.—A faulty conception seems to exist on the part of the profession upon this point, that if a thrombosis exists and is com-

plete, due to syphilis, a recovery will not take place under the most religious exhibition of the mercury and iodides any more than if due to some other cause. The prognosis is better the earlier the condition is detected; if detected later, with careful treatment they may be held in check and improvement expected, and if very late, no great improvement is likely to occur. Gummata frequently are absorbed, but often irritative lesions remain at their sight. Areas of softening or sclerosis result from thrombosis, depending on a complete or partial occlusion of the blood vessel.

Turner makes the statement that 30 to 35 per cent of cerebral syphilitics recover, that about 12 per cent. are fatal, while the remainder—over 50 per cent.—are more or less permanently maimed. Under the head of *treatment*, it is noted that the only remedies worth mentioning in the early manifestations are the iodides and mercury, and that neurologists are not a unit as to how the former should be given, some maintaining the large dosage and others the smaller—Gowers more especially favoring the small dose of the iodides, while authorities in this country resort to the larger doses. The subject is too vast to be anything like fully discussed in a single paper at one meeting.

Coca primarily acts as a depurative of the blood. When this nutrient stream is freed from the products of tissue waste—and not until then—the muscular and nervous systems are in a condition where physiological repair can be effected. Whether the exhaustion be of a temporary nature, as that induced through excessive physical exertion, or be due to the prolonged presence of disease, the products of combustion in the human machine—the ashes and the clinkers—must first be thrown out in order that the entire system shall work more effectively. Coca will bring about this excretive action in a phenomenal way, and when the volatile principles of this drug are carefully preserved through skilled manipulation—such as in the famous Vin Mariani—there is presented a depurifier and supporter *par excellence*.

CHLOROFORM AS A SURGICAL ANESTHETIC AND ITS ADMINISTRATION.*

By MANFRED CALL, M. D., Richmond, Va.,

Adjunct Professor Practice of Medicine, Medical College of Va.

A study of this subject involves, primarily, three divisions—the *anæsthetist*, the *drug*, and its *administration*, the whole representing the welfare of the patient.

As to the *first*—the *anæsthetist*—it is well said that ‘no person who has not a wholesome fear of anesthetics can be trusted to administer them. In many cases the anesthetization transcends the operation in gravity and importance, and, to insure success, it is essential that one of skill and experience should conduct the administration.’ He alone is responsible, and should have the sole direction of this most important function. Suggestions from surgeon, assistants or bystanders serve but to confuse and directly interfere with a successful and smooth narcosis. One who needs watching and close supervision clearly has no right to assume the grave responsibilities associated with this task, one which I am sorry to say is often left, the country over, for the latest arrival on the house staff, or used as a means to side-track a troublesome visitor.

One idea should predominate, first and foremost—*rigid attention to the immediate business in hand*; give the anæsthetic, and leave the operation, its progress and interest, exclusively to the surgeon. How often have we seen the one at the head with eyes fixed on the field of operation in all-absorbing interest, the patient left to a too kind providence, and only recalled to his duty by an emergence from narcosis or the rapid supervention of some alarming symptom necessitating the most active measures for resuscitation. In my experience, most of the symptoms that develop oftentimes so unexpectedly have done so at a moment when my vigilance has been relaxed. I am convinced that a careful observer can, in a measure, anticipate, and, to a large extent, diminish their danger.

The logical conclusion affording the solution of the difficulty is the appointment of an *expert anesthetist*, certainly in the larger hospitals, and whenever possible, the assistance of such a one in private cases. Unlike the junior members of the house staff, he does not wish to learn surgery; the field of operation has not an overpowering attraction for his mind and eye; he has

a reputation to foster; the full burden of responsibility rests on his shoulders, and from past experience he has learned the many pitfalls that might entrap the unwary.

Physiological action.—On the respiratory mucous membrane the vapor of chloroform is irritating, but much less so than that of ether. The respirations in the beginning of narcosis are deeper than normal; later, they become more rapid and shallow.

When absorbed, chloroform is not simply in solution, but is combined with the cholesterin and lecithin of the red corpuscles, with a reduction in the hemoglobin and consequent impairment of the oxygen-carrying power of the blood, and a reduction of the oxidation processes throughout the body. Mikulicz states that the administration of chloroform may reduce the amount of hemoglobin as much as 5 or 10 per cent., and gives 30 per cent. hemoglobin as the minimum for the administration of this drug. Fish asserts that chloroform extracts oxygen from the oxy-hemoglobin, combining with the hemoglobin to form a more stable compound. Given a hemoglobin percentage of fifty, the corpuscles cannot meet the physiological requirements of the body.

On the central nervous system it is depressant, in order, to the brain, cord, and, finally, the medulla, with the sensory functions affected before the motor. Local nerve mechanism is affected as well.

Blood pressure is lowered. Ordinarily, this would stimulate the vaso-motor centre, but for the automatic regulation of the circulation an unimpaired sensibility of this centre is necessary; this we have seen is not intact, for the drug has already depressed the central, the local nerve mechanism, and the heart itself. There is a weakness in the auricular contractions, an increase in the ventricular relaxation, the heart coming to a standstill in diastole. In rapid chloroformization, the sudden impact of the irritating vapor upon the peripheral nerves of the breathing surface may cause a contraction of the pulmonary arterial vessels, with an ischemia of the lungs and overpowering of the right heart.

Primary dilation of the pupil occurs, produced by reflex inhibition of the third nerve centre; this is followed by a contracted pupil due to complete subjection of the cerebrum leaving an unopposed third nerve. In dangerous narcosis, the third nerve centre is poisoned, and no longer controls the pupil which dilates, is less

*Read before the Richmond Academy of Medicine and Surgery, February 10, 1903, Dr. W. R. Mercer, President; Dr. Mark W. Peyser, Secretary and Reporter.

sensitive to light, with fixation of the globe. (Ward.)

Fatty changes are induced in the liver, kidneys, heart, etc., by the effect on the blood cells and by direct effect on the tissue cells. The urine is so loaded with alkaloidal bodies that the kidneys cannot perform elimination with sufficient rapidity, resulting in a condition of auto-intoxication. Tests as to the permeability of the normal kidney before and after chloroformization show a ratio of 35-41, with reduced quantity of urine and increased acidity. When albuminuria exists prior to anesthesia, the amount may be increased; when non-existent, 15-20 per cent. of cases may develop this symptom, the changes varying from hyperemia and capillary hemorrhage to extensive coagulation necrosis of renal epithelium (K. Ajello). Chloroform, by volume, is more irritating to kidney cells than ether, and its resulting nephritis is more likely to become chronic.

After death, it is found that the reaction of the fluids and tissues of the body is decidedly acid.

Body temperature is reduced through increased output of heat by the skin and lessened heat production. Watson notes fall of temperature after any general anaesthesia, more marked with chloroform, sometimes requiring twenty-four hours to regain normal. After reduction of body temperature, patients are more susceptible to microbic infection.

Elimination is accomplished mainly by the lungs; the drug is found also in the urine and the stomach, and is said to occur in the perspiration and the milk.

Ordinarily chloroform tends to decompose with the production of HCl and carbonyl chloride, the latter causing the majority of cases of after sickness. When administered by gas-light, its vapors are broken up into chlorine and carbonic oxide, and produce bronchial irritation, with the possibility of asphyxia.

From this brief resume of its physiological action, we may deduce the indications and contra-indications to its use, and the special dangers. Palmer gives the following *indications for its choice*:

1. Extensive bronchitis, pneumonia or other inflammatory conditions of the respiratory tract.
2. Acute and chronic nephritis.
3. Aneurisma, degeneration of the vessel walls, high tension pulse.
4. Brain surgery.

5. Abdominal and pelvic operations.

To these may be added operations about the upper air passages, where the actual canterly is to be used. With foreign bodies in the larynx and trachea, chloroform anesthetizes more readily with less secretion of mucus, but with greater tendency to respiratory failure and reflex inhibitory phenomena (Crile).

Chloroform is *contraindicated* in fatty degeneration and dilatation of the heart, emphysema, extreme prostration, shock, collapse and hemorrhage.

"Those of the so-called lymphatic temperament, neurasthenics, chlorotics, anemics, leukemics, withstand general anaesthetization badly."

Valvular lesions increase danger only if they are obstructive, and even in such cases compensatory hypertrophy may suffice for the increased resistance encountered.

The type of chloroform blood pressure curve shows subnormal pressure in 90 per cent. of all cases. Increased blood pressure is found in a large number of cases in individuals past fifty years, while the instances of greatest diminution of blood pressure are exclusively represented in children under fifteen. This is contradictory to the popular belief that children bear chloroform well. My experience confirms the truth of this statement.

During the administration, special dangers arise at certain stages of narcosis; *early in inhalation*, from sudden paralysis of the cardiac ganglia, due to reflex action from peripheral irritation of an associated nerve; *in the stage of rigidity*, from tetanic fixation of the respiratory muscles, with resulting venous stasis and cardiac cessation; or there may be a paralytic relaxation followed by deep inspirations of surcharged air paralyzing the cardiac or respiratory motor ganglia.

Crile has demonstrated a point of some interest. He has shown that manipulation of the brachial plexus, or of the nerves supplying the respiratory muscles cause, by mechanical stimulation, an increased respiratory action. This is likely to signify to the anesthetist a condition of under anaesthesia, while there is actually the danger of over-anaesthesia by an increased and excessive inhalation. Depression is likely to occur in proportion to the severity of the manipulation and the suddenness of its cessation, affecting most markedly the circulation and then the respiration.

Vomiting may occur in the early stages from a nauseating effect of the vapor, or reflexly from irritation of the pharynx, and, later, during emergence from narcosis.

Cyanosis is frequent in short-necked individuals and drunkards. It is induced by unfavorable posture; it follows cough and vomit, and may occur during the stage of rigidity, and from mechanical obstruction to respiration by a falling back of the tongue and epiglottis.

Before commencing the administration it is well to have a history of each case and a special examination made by the anesthetist of the mouth, nose, respiratory and cardiac functions, a complete urinalysis, and, if necessary, blood examinations, together with an account of previous anesthetizations.

In emergency cases, and in intestinal obstruction with stercoraceous vomiting, gastric lavage is indispensable, as it empties the stomach, lessening the vomiting and the danger of the aspiration of particles of the gastric contents into the respiratory tract. In deliberate operations, time is given for a proper supervision and correction of all the excretories, pulmonary, cutaneous, renal and alimentary. The bowels should be moved the night before, an enema given in the morning and catheterization just before going to anesthetizing room. On the morning of operation, no food of a solid character should be taken; in patients weak or debilitated, a glass of warm milk or tea should be given, or a nutrient enema, five or six hours before the operation. A nurse should always be present with a female patient, and in all cases an orderly or other assistant in case the patient prove obstreperous. Tying a patient in the beginning necessarily alarms and excites him. Within convenient reach place hypodermic syringe with stimulants, a tank of oxygen and tongue forceps. As a routine measure, I generally precede the anesthetic with atropine gr. 1-100. This stimulates the respiratory functions, prevents cardiac inhibition from irritation of the vagus, checks excessive secretion in the upper air passages and prevents the tendency to edema of the lungs by stimulation of the vaso-motor center. It tends to raise the temperature of the body and increases, rather than lessens, the urinary secretion, and, in my opinion, facilitates particularly when used as part of the after treatment free movement of the bowels. The only objection is its action of obscuring the pupil symptoms.

Before and during the operation the posture should be as comfortable as possible, allowing free expansion of the chest and movement of the abdomen. There should be no high pillow under the head, no constrictions about the body, no foreign body in the mouth, and, when on the operating table, the hands should be secured in such a position as will minimize the danger of post-operative paralysis. Reassure the patient and allow no conversation with bystanders or assistants. Note the normal size of the pupil. To prevent irritation from the vapor, protect the lips and nose with cold cream or vaseline and cover the eyes with a towel. I prefer the Esmarch inhaler with a small pledget of cotton at the top; the cover to this cone should be sterile, thus avoiding the danger of infection of the air passages.

Put on a few drops of chloroform and hold the mask about three inches from the face, gradually bringing it nearer as the patient becomes accustomed to the odor and is more composed, until finally the mask rests on the face encircling the mouth and nose. Let the breathing be natural rather than abnormally deep, for very little vapor can be tolerated at first, and if deep inspirations be given at the start exhaustion and shallow breathing come on at a time when more of the vapor should be inhaled. Children can be told to blow away the cotton; older people, when drowsiness and slowed breathing begin, can count. The frequent addition of small quantities is far preferable to the pouring on of larger quantities of chloroform at longer intervals. If the breathing can be kept regular there is no danger in pushing the drug until complete narcosis. The degree of narcosis and danger is not due to the amount, but to the concentration of the vapor, and this should never exceed 4 per cent. (Finney). As an index to regularity of breathing it is unsafe to depend entirely on the respiratory movement of the chest and abdomen, for this is often kept up even in the presence of a dangerous degree of cyanosis, as shown by inspection of the lips and face and altered character of the pulse.

The vapor at first irritates, occasionally provokes coughing, pupils dilate, pulse ordinarily becomes more frequent than normal, but slows down in very nervous subjects and may possibly go below 70. Should struggling occur, do not push the anesthetic, for then deep breathing is induced, and if the cone is saturated a dangerous dose may be given. In many cases this is

followed by a stage of rigidity with slow and shallow breathing, some cyanosis. Finally relaxation occurs and the breathing becomes deeper and more regular, the muscles flaccid and complete narcosis rapidly supervenes.

As to the pupillary changes, there is primarily a slight dilatation, then contraction with reaction to light until complete narcosis, when the minimum size is attained with reaction to light and conjunctival reflex lost. Should the pupil now dilate, it is from one of two causes: The patient has either too much, or too little, of the drug. *If the former*, there is no conjunctival reflex, no reaction to light, but a climax of lowered blood pressure with cardiac and respiratory failure. *Should the latter be the case*, the conjunctival reflex returns, the pupil reacts to light, relaxation of muscles begins to disappear, and, if the jaw be held forward, as mentioned later, this is done with more effort on account of the rigidity of the muscles of the jaw and neck. One of the first and mostly easily observed symptoms of returning consciousness is rolling of the eyeballs. Operation should be begun only when the patient is thoroughly anesthetized, thereby preventing greater vaso-motor shock and more prolonged manipulations. The preliminary scrubbing, placing of sterile towels, etc., may be done just before the stage of complete narcosis.

TREATMENT OF COMPLICATIONS, PREVENTIVE, AND ACTIVE.

To ensure regular breathing, it is essential that there be no obstruction to respiration, the most common cause being the falling back of the tongue and epiglottis. A point of great utility which I have practiced for quite a while is so well described by Simpson I will quote his words. It is in regard to the management of the lower jaw: "Place the thumb of the hand on the bridge of the nose at its root, palm applied to cheek, middle of ring finger presses from behind forward upon the posterior surface of the angle of the jaw, and, as relaxation of the muscles occurs with approaching narcosis, the lower teeth are hooked in front of the upper." Fenger prevents obstruction from falling back of the tongue by making traction of the hyoid bone, passing a ligature around it for this purpose. In those cases where traction on the tongue becomes necessary, remember that when forcibly done there is danger of inhibition of respiratory and cardiac action varying from slowed action to complete cessation. The same result follows

too forcible extension of the head. Atropine prevents the cardiac, but not the respiratory phenomena.

Much can be done for the prevention of collapse by a well-warmed room, proper and sufficient covering for the patient, hot-water bags, dry table, etc. In prolonged operations, it is well to suspend the administration of the vapor for a few minutes. Letting the patient inhale oxygen or pure atmosphere tends to regenerate the blood and prevent collapse.

Should collapse develop, withdraw the anesthetic, lower the patient's head, but do not forcibly extend it; if necessary invert him, make gentle and rhythmic traction of the tongue (eighteen to the minute) perform artificial respiration with the first movement, one of exhalation, give inhalations of oxygen and hypodermic administration of strychnine gr. 1-30, atropine gr. 1-100, digitalin 1-100, caffeine as necessary; normal saline solution may be poured into the abdominal cavity if the operation be a laparotomy, by hypodermoclysis if the circulation is sufficiently active to absorb it, or quicker still intravenous injection. In abdominal cases where the Trendelenberg position is used, there is less liability to syncope. Bandaging the lower extremities is often of service.

Do not wait to stimulate until the circulation is so poor that rapid absorption is difficult, but try to forestall by early application; thus, during the progress of an operation if the patient is not progressing satisfactorily, and any manipulations increasing the shock or prolonging the operation are demanded, throw in the stimulant, and if the response is not decided, change, in the absence of greater contraindications, to ether.

A report of revival of the heart in an abdominal case by grasping the organ through the diaphragm and making rhythmical compression is given by Starling. Deep compression of the precordial region at the rate of 120 to the minute was successfully used by Green on a patient in whom, for a period of seven minutes, no heart beat or respiratory effort could be detected.

Supra-renal capsule has a marked stimulating, though evanescent, effect upon respiratory action, the vaso-motor system and the heart. The best method of administration is the intravenous injection of a 1 per cent. solution, using from fifteen to thirty grains.

The value of the faradic current is due more

to its stimulating effect on respiration than to any special direct effect on the heart. Its use is attended with the danger of cardiac inhibition; a much milder current is required for the respiratory than for the cardiac stimulation.

One of the most frequent and distressing of the sequelæ is the *after-vomiting*. The most important preventive measure is the preliminary attention to the alimentary tract. I have tried some of the various drugs prior to anesthesia, reputed to be specific, but my results have been very unsatisfactory. There is only one measure upon which I can depend with any certainty, and that is gastric lavage. In the majority of cases it will give a cessation of this symptom for a period varying from four to eight hours, when it may be repeated. A few drops of lemon juice added to a teaspoonful of water and administered at regular intervals will often have a quieting effect.

The paralysis that sometimes follows the administration of an anesthetic is generally due to faulty position of the patient or incorrect securing of the extremities allowing undue pressure to be made on the nerve at some point along its course. A few cases are ascribed to the direct effect of an impure drug on the nerve proper.

As to the frequency of pneumonia, the Presbyterian Hospital of New York, from 1887-'97 reports that 4,914 ether cases were followed by seventeen pneumonias with nine deaths, and that 689 chloroform cases were followed by eight pneumonias with seven deaths. Schultz believes that this difference is due to the greater number of malignant diseases of the mouth and respiratory tract among the chloroform subjects.

In conclusion, I recognize the fact that the important question of shock has been but lightly touched upon and many points necessarily omitted as not bearing strictly upon the subject title.

DISCUSSION.

Dr. E. L. Hobson said that Dr. Call had so well stated the physiological action of chloroform that he would not go into it; but would simply give some practical points that had appeared to him during the administration of the drug in several thousand cases. The article used should be the purest. If a small quantity were allowed to evaporate little or no odor was detected if pure. Chloroform first affected the brain and last the motor tract of the medulla. The anesthetist should understand absolutely the physiological effects of the drug, and as his responsibility was a grave one, should demand

that he be allowed entire charge of his particular field, and should pay no attention to remarks of the operator or outsiders. The family of the patient, but never the patient, should be informed of the danger of the agent. The anesthetizing room should be well ventilated and have a temperature of about 80°; the patient's bowels should have been moved previously; no food should have been administered for several hours; he should be well clad and should have no foreign material in his mouth. Physical examination was to be made as quickly as possible, ascertaining the best position for breathing and the most natural for the head—using no pillows if not necessary. The patient was not to be removed to the operating room unless fully under; otherwise, vomiting ensued. It was best to administer but little chloroform at a time, and if the patient were nervous, this end could be gained by engaging him in conversation, thus withdrawing his attention, and simultaneously encouraging small inhalations. By instructing him to draw up his arm, count, etc., his attention was directed to the administration and no good resulted. The patient never was to be tied till fully under the anesthetic. It was impossible to tell absolutely when the patient was ready for operation. In some cases, where the reflexes had been abolished, the knife had been felt; in others, where they had not, the knife was not felt. Dr. Hobson said he was guided entirely by the respirations—that he could tell nothing from the heart. He knew that a patient was doing well when everything was going on normally. The anesthetizer's duty was to keep the operator informed of the patient's condition. There was no way of stopping the nausea and vomiting in the beginning. During the operation, if they appeared, he allowed the patient to partially recover, except where laparotomy was being done. The instant strangling commenced the cone was removed till easy breathing occurred. If it were in the Sims' position the right shoulder and arm were raised; if in Trendelenburg's, the head was drawn farther backward and shoulders upward. It was all important for the anesthetist to follow the progress of the operation; and it was often the case that he could tell before the operator could, in deeply situated diseases, when the seat was reached. Rendering anesthetization dangerous, in the order of importance, were brain operations, castration and varicocele. In castration, he allowed the patient to partially

recover just before the cord was tied, because the pain of tying acted as a stimulant. In operation on the head, lips and mouth, the patient was never so profoundly anesthetized as to prevent voluntary expectoration. Where a large amount of fluid was withdrawn, as in ovarian cysts, and the warmth thereby greatly reduced, shock was great and the patient should be carefully watched. Danger signals were to be looked for, especially in brain surgery and operations on the plethoric, alcoholics and morphine habitues. He had never had much trouble in lung affections, and had never seen pneumonia as a result; nor had he ever seen bad effects on the kidneys or heart either during or after the operations. To combat danger, the operation was stopped, the head lowered and body raised and artificial respiration produced or oxygen administered if needed. He had never seen any benefit derived from drugs unless the patient were breathing well. In laparotomies hot water was poured into the abdominal cavity. Pain, upon the revival of the patient, was an excellent stimulant.

After the operation the patient was kept on the table until signs of consciousness appeared. The patient should never be awakened; his head was to be kept low and the liability of vomiting to occur, even as late as ten hours after, was to be explained to the relatives.

To prevent vomiting, a cloth saturated with vinegar was said to be efficient, but he had never found it so; and no food or water was to be given for several hours.

In conclusion, Dr. Hobson said the main object was to keep the patient anesthetized with as little chloroform as possible, and, therefore, the operation should be watched. He had never seen a death from its administration. All the bad symptoms he had seen were respiratory in character, but in reviving the patient he had not used drugs in more than one in fifty cases.

Dr. W. W. Dunn stated that deaths in the dental chair were always due to chloroform. In dental operations the head was never extended and the depressing effect of the operation was augmented by that of chloroform. He, therefore, preferred ether in this work, as also in operation on the brain, the plethoric, alcoholics (who could never be gotten beyond the rigid stage with chloroform) and in shock or collapse. In operations on the nose and throat, as for adenoids or tonsils, especially in children, he gave chloroform till the tonsils were re-

moved, then turned the head to allow the blood to escape and then administered again for the adenoids. If the child was frightened he gave the chloroform during sleep. In operations for removal of the upper or lower jaw, in which the bleeding was excessive, he kept the head to the edge of the table and lowered it, so that the blood could escape, thus obviating the danger of its being inspired.

Dr. Stuart McGuire stated that he dreaded chronic alcoholic and rectal cases more than any other, and that from experience he had learned that chloroform was best for the former and ether for the latter. He thought that too vigorous efforts were used in the endeavor to resuscitate in threatened death from anesthetics, and that the condition should not be confounded with shock, which it closely resembled.

Dr. R. F. Williams believed that the cause of death in chloroform narcosis was vaso-motor in character, experiments of the third Hyderabad Commission showing extreme vaso-dilatation. In the aged the absence of fall in tension under chloroform may be explained by arterio-sclerosis. Clinically, compression of the limbs forced blood to the heart, and this organ continued beating after respiration had ceased, due to the presence of a small amount of blood, enough to supply the coronary arteries. Respiration was to be watched, as the respiratory center first showed effects of anemia of the medulla.

In dental operations, as others, the head should be kept low, because gravity carried blood from the centers. Atropine counteracted this effect of chloroform, being a vaso-motor stimulant. Amyl nitrite, being a vaso-dilator, was contra-indicated. The difficulty in anesthetizing alcoholic patients was due to the similarity of the actions of alcohol and chloroform, the centers and nerves being habituated to this action.

Dr. Charles R. Robins asked what was the principal danger signal in chloroform narcosis, and if it could be positively said when the proper stage of anesthesia was reached? He had noticed that in persons who were much exposed to the elements, as sailors, the sensibility of the conjunctiva was very much diminished.

Dr. D. Meade Mann said that with the present state of our knowledge, no one should determine beforehand what anesthetic was to be used. In dental surgery, the patient was not in proper position nor even sufficiently anesthe-

tized. In those operations where there was great shock, as castration, he pushed the agent so as not to add the shock to that of the operation. The danger points were the beginning of anesthesia, beginning of the operation and the vital part of the operation. In beginning anesthesia, it was to be done slowly, yet if the patient were slow in getting under, the drug was to be pushed a little, as in any case the air and blood could absorb but a certain amount of the gas. When the patient started to gag, the chloroform was to be pushed, as lessening the amount increased the amount of gagging.

Dr. Greer Baughman stated that every death he had seen as a result of chloroform narcosis occurred a few days later from pneumonia, etc., caused by the patient being insufficiently clad and swallowing the vomitus.

Dr. Frank M. Reade was of the opinion that death from chloroform in dental surgery was due to the depression of the heart from shock added to that of anesthesia. In addition, patients in these operations were not sufficiently under the influence of the agent.

Dr. Call, in concluding the discussion, said that every operation done under chloroform was to be considered dangerous. Drugs were intended to tide over and sustain until elimination of the chloroform could be accomplished. Great help could be derived thus from the use of strychnine and atropine. He agreed with *Dr. Williams* as to the vaso-dilator action of chloroform. It was imperative that the anesthetist should attend to his own business. How was it possible for him to watch the operation and yet be able to tell the operator, from the effect of the patient, when a certain stage was reached? Danger could be seen in the pupillary reflex; but there was no certain sign, because of the likelihood of idiosyncrasy. Insufficient anesthesia could be determined by rolling of the eyeballs, the difficulty with which the jaw could be pushed forward and the movements of the patient. Chloroform was certainly indicated in operations upon alcoholics.

Mamma: You must be awfully careful, darling. The doctor says your system is all upset.

Little Dot: Yes, it is, mamma, because my foot's asleep, and people must be terribly upset when they go to sleep at the wrong end.

GUNSHOT WOUNDS OF THE STOMACH, WITH REPORT OF A CASE.*

By F. LAWFORD, M. D., Berkley, Va.

In the short time at my disposal it will be impossible to go deeply into the subject of gunshot wounds of the abdominal viscera, their various symptoms, diagnosis and treatment. Therefore I shall have to take the subject up in a general way and bring forward a few points which are of interest to the general surgeon in civil practice. I shall avoid all statistics, and confine myself mostly to injuries to the stomach alone and to the differences between modern and military missiles, the velocity, etc. Also the difference in treatment of military and civil surgery.

Wounds of the abdominal viscera are among the most fatal injuries the surgeon has to deal with. The records of the past wars show that the mortality from gunshot wounds of the abdomen, where one of the viscera was injured, was very great. Even in the modern hospitals the mortality is high.

In civil life, pistol balls are usually the vulnerating bodies, and these lead bullets make a far more dangerous wound than the military rifle bullet. It has been confidentially asserted that the old missiles produce more primary and secondary destruction of tissue than the modern metal jacketed bullet, although the modern missiles have a greater explosive effect in some tissues of the body, especially in bone.

When a man is shot in the abdomen, the chances of one of the abdominal viscera having been wounded can be counted on in the great majority of cases, and an exploratory laparotomy should be done in every case if seen in time—that is, within the first six or eight hours, and if the patient can be gotten to a hospital.

The order in which the various viscera are injured is shown by the experiments of Von Coler and Schjering in sixty perforating shots on live animals and cadavers, as follows: Intestines, 29; liver, 24; stomach, 19; spleen, 5; kidneys, 3 and bladder 1.

It will be seen by the foregoing experiments that the stomach is often the seat of injury and the chances would be increased if the stomach was distended with food. In perforating wounds of the stomach there is no marked explosive effect from the bullet as a rule, but the

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size of the wound is influenced by the amount of fluid present. If the stomach is filled with liquid or semi-solid food it is very likely to be badly torn at a short range by a bullet.

The opening of entrance is a little smaller than that of exit, as it was in the following case:

The course of the old-fashioned lead bullet is, as a rule, very easily deflected, and there is no telling what direction it may take. For this reason the diagnosis of perforation may be very difficult immediately after the shooting has taken place.

It takes very little, as a rule, to entirely change the course of a lead bullet and send it in a very different direction from the one in which it was going.

In civil and military practice nowadays the treatment of stomach wounds is very different. Up to a short time ago it was the general rule in military, as well as civil, practice to subject all cases of perforating wounds of the stomach to immediate operation in order to save the patient's life. Lately it has been stated by surgeons that it was proved in the Spanish-American and South African wars that a perforating wound of the stomach caused by a modern military bullet is only not necessarily fatal, as was formerly supposed, but stands a better chance for recovery in the majority of cases if left alone than if subjected to operation.

The reasons for this, however, are to be accounted for: First, by the wound being made by the metal-jacketed, small-calibered, high-velocity bullet of the modern military rifle, which makes a small, smooth hole that closes after the ball, allowing little or no leakage; and, secondly, from the fact that these cases had to be operated on in the field and at the advanced hospitals under insurmountable difficulties, and consequently were followed by uniform failure and disappointment, while if left alone the majority got well.

In a modern hospital, however, this would be very different, for if the wound to the stomach caused by one of these metal-jacketed bullets does not of itself cause death in the majority of cases when left alone, certainly an exploratory laparotomy, if done under strict antisepsis, would not raise the mortality to such a rate.

The poor results in these cases, then, must be due to the unfavorable surroundings under which these cases were operated on. Now, in civil practice, as a rule, we have a wound made by a soft lead pistol ball, travelling at a low

velocity and making a comparatively large, jagged wound with a great danger of leakage. These cases call for immediate operation in every case.

We are called to see a man who has been shot and the bullet has entered the lower part of his thorax, yet he is complaining of pain down in his abdomen. The first thing to do is to find out which way the ball has gone and what organs it has injured. Now, to do this we must not make the fatal mistake that so many do, of picking up the first dirty probe they come to, and go probing around after the bullet as if they were trying to run a rat out of a hole. In fact, it is a great mistake to use any kind of a probe, as probes are misleading and dangerous.

If the man is shot in the left side of his thorax a little below the heart and he is complaining of pain in his abdomen, we would have good reason to believe that his stomach was injured, especially if it was distended with food. The best way to make sure whether or not the stomach has been injured is to use a stomach pump and see if there is any blood in the stomach. If we find blood (provided his nose has not been bleeding) we can be pretty sure that his stomach has been injured. According to whether the bullet has injured a large vessel in the stomach wall or only a small one, we will find a greater or less quantity of blood in the stomach. But the presence of blood, if only in a small quantity, is sufficient to confirm the diagnosis. After the diagnosis of perforation has been made we should operate as soon as possible, because every hour of delay very much lessens the patient's chances of recovery, on account of the leakage which is taking place all the time and the thousands of bacteria of all kinds which are escaping into the peritoneal cavity, especially if the stomach is full of blood.

As we all know, the two greatest dangers we have to contend with in gunshot wounds of the abdomen are septic peritonitis and hemorrhage. Septic peritonitis would be most liable to follow in a case where the stomach was full of blood and liquid. Hemorrhage is most dangerous where the bullet perforates the mesenteric vessels. There is another danger which may be considered of some import, and that is, the danger from tetanus. This has caused a few deaths.

All things being equal, the prognosis is better if the stomach is empty. In the following case the patient had eaten a heavy meal just before he was shot. His stomach was washed out with

a pump very shortly after the accident, thus serving the double purpose of making clear the diagnosis by the finding of blood in the stomach and at the same time removing the food, and in this way lessening the liability of septic peritonitis. This was done before the patient was removed to the hospital.

CASE.

Name, Moses Anderson (colored); age, 24 years. On the night of September 11, 1902, I was called to see the patient, who had just been shot. I found him suffering from shock and complaining of pain in his abdomen. He was shot with a .38-caliber pistol at close range. The man who shot him was directly in front of him. The bullet had entered the left side of the thorax between the eighth and ninth ribs on a line with the nipple and three inches below it. After entering the thorax it had evidently taken a downward course, as the patient was complaining of pain in the abdomen. I felt sure that the stomach was injured from the direction the bullet had evidently taken and from the fact that he had just eaten a heavy supper and his stomach must necessarily be very much distended with food. To affirm the diagnosis his stomach was washed out and a small quantity of blood was found to be present. As before stated, this served the double purpose of confirming the diagnosis and at the same time removing the food, which was increasing the liability of septic peritonitis. As soon as the diagnosis was made the patient was removed to the Norfolk Protestant Hospital, where I operated on him.

OPERATION.

The patient was put on the operating table, anesthetized and prepared for a laparotomy. An incision was made in the median line from one inch below the ensiform cartilage to two inches below the umbilicus—seven inches in length. When the peritoneal cavity was opened I found that a small quantity of stomach contents had escaped. When I cut into the lesser peritoneal cavity and brought the posterior surface of the stomach into view I found the opening of exit on the posterior surface of the greater curvature near the cardiac end. This was quite a good-sized, jagged wound. It was closed with a purse-string suture of fine silk. The opening of entrance was on the posterior surface a little below the œsophageal opening, and on account of its being so close to the œsophageal attachment of the stomach to the diaphragm it was

very hard to get at. It was not as large as the wound of exit. It was closed in the same way as the first.

The peritoneal cavity was then mopped dry with sterilized gauze and the intestines were carefully examined to see if they were injured, but were found to be unhurt. The peritoneum was now closed with fine catgut, leaving a small place for drainage. The abdominal cavity was now closed in the regular way and the skin closed with a continuous sub-cutaneous suture, all except an opening about one inch in length just above the umbilicus, where a gauze drain was inserted right down to the greater curvature of the stomach, to allow of free drainage. Sterile dressings were now put on and the patient put to bed with hot bottles around him. Strychnia sulphate and digitalis were given by hypodermic every four hours. The patient was kept alive for the next seven days on nutritive enemata of predigested food every four hours and not allowed to take anything by the mouth. The wound healed by primary union, except where it was packed, and this was allowed to granulate and heal from the bottom.

The patient had an uninterrupted recovery. The temperature never went above 100.2-5. The most frequent complication in these cases is subphrenic abscess, but this patient had no such trouble.

For a few days after the operation the patient complained of some aching in his back on the left side, where the bullet was imbedded in the muscles of the back. Since the patient left the hospital, October 9, 1902—twenty-eight days after the operation—up to the present date he says he has been as well as he ever was in his life.

THE PSYCHOLOGICAL FACTOR IN MEDICINE AND ITS APPLICATION TO NERVOUS DISEASES.*

By JOHN PUNTON, M. D., Kansas City, Mo.,

Professor of Nervous and Mental Diseases University Medical College, etc.

With all our boasted advance, the above subject of this paper is not considered sufficiently important to be embodied in the curriculum of our medical colleges, and this is the reason for

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the prevailing indifference exercised by medical men concerning its special value both as a cause as well as a cure for disease. Because of our inability to define satisfactorily to all inquirers its true essence is another reason for its being ignored by the general practitioner.

Inasmuch as we are as yet unable to determine the true nature and character of mind itself, it is difficult to define what the psychologic factor is, as the two are synonymous. But while we may not be able to state its true essence, we know what is even better, and that is, we know what the mind will do; consequently we know what the psychologic factor will do, and this is infinitely better than squabbling about what it is. Indeed, all we know about the mind is its operation; all else is theory.

If, however, it is necessary to define what the psychological factor is before being entitled to recognition as a scientific therapeutic agent of no mean worth, then we say that it is the influence exerted by one mind upon another, or the influence of mind on mind. You will observe that this tells what it is by stating what it does. Now, we know that the influence of mind on mind is capable of accomplishing a great deal both for harm as well as good to the nervous invalid, and while we may not be able to satisfactorily explain the intricate occult mechanism of which this is accomplished, yet we are compelled to recognize its powerful effects by results attained in pathologic and therapeutic realms.

Clinical observation and experience teach us that nervous affections at times are not amenable to either pharmacology or surgery, but are powerfully influenced for good or ill by mental and moral means, according to the nature and character of their environments as well as by the personalities which surround them—all of which have a very important bearing upon results obtained in their treatment. Hence, in considering disease, it is not always a question of drugs; indeed, this at times is a very weak staff to lean on. Neither does the case appeal to surgery for relief; indeed, surgery does an immense amount of harm when indiscriminately employed. But where these are of no avail, then we have still open to us the great realm of psychologic means and measures, which, in many cases, prove the "one thing needful." At times a combination of all these—viz., drugs, surgery and mental therapeutics—are necessary to accomplish the desired result.

Under certain conditions the mind exerts a powerful influence on the body for good or ill; hence, mental processes are often responsible for profound physical changes. Moreover, we find the converse proposition equally true—viz., that purely physical processes are capable of producing marked and profound mental changes. These facts are too well understood to need further enlargement. How these physical and mental changes occur is sometimes difficult to explain, but their presence in the individual is undisputed.

There has been a marvellous development in recent years of psychological research, as well as the demonstrations of its power in healing the sick and afflicted. Simultaneous with its growth and cultivation, all forms of quackery have arisen apparently as its legitimate offspring. The reason assigned for the excessive amount of empiricism as well as its popularity is attributable to the wonderful results attained by these irregular practitioners in morbid conditions, which have hitherto resisted all other means of treatment, but which have rapidly yielded to the free use of purely psychologic methods, which we now designate as the *psychologic factor in medicine*. A strong plea is made in behalf of not only the study, but also the recognition by the regular general practitioner of this psychological factor as part of his armamentarium. So common and widespread are curative results now obtained—more especially in morbid neurotic conditions that refused to yield to the more strictly scientific conservative methods of the regular family physician—that the laity has about come to the conclusion that the quack, with his non-medicinal or psychological methods, is even of greater benefit to mankind than the more common modes of treatment which the regular graduate of a medical college employs. This places us at a disadvantage, because of our stubborn refusal to study impartially the merits and demerits of the various elements which constitute the psychological factor, or failure to apply them in certain, morbid conditions, where they are especially indicated, because they seem to smack of quackery. No method, however, should be decried as trivial or utterly worthless or even unethical if it proves successful in the relief and cure of disease, although at the same time it may be recognized as the most potent agent used at the present time in the practice of the various forms of quackery.

If scientific medicine means what Dr. Hadra

tells us it is—viz.: "The sum of systematized knowledge acquired in every conceivable manner, and that it must have full and perfect liberty, and not allow itself to become imprisoned within certain limits, and that its object is nothing more than truth itself," then I think we as regular physicians have sufficient latitude to compass any and all methods, under whatever name they may be known, that prove successful in the alleviation of suffering and disease.

As to the pathogenic influence of both emotion and idea when applied to disease, the author forcibly illustrates it by reference to the serious degree in which it is manifest in hysteria and neurasthenia, as well as hypochondria. The definite idea, for instance, of weakness in a limb may later render it impossible to will its normal movement; hence, functional paralysis occurs. The conception of a pain in a part may be continued and persistent; self-introspection become so magnified as to lead the patient to believe he is suffering from cancer. It is in such conditions that the psychologic factor becomes a cause instead of a cure for disease, and illustrates the importance of untimely and unnecessary remarks during the examination of such a person by either the physician or friends relative to the absence of certain symptoms which should be present in order to confirm the diagnosis, or the probable complications which may arise as a result of the existing condition—all of which tend to produce even more troublesome features beside exaggeration of those already present in the case. Moreover, these pathogenic ideas and consequent states of ill feeling form the basis that lead to the formation of the various morbid fears or phobias-obsessions or besetments, which are accompanied with vacillating mental states illustrated in the various forms of doubt and indecision concerning the patient himself or his future actions. Whatever their cause, they must of necessity be compensated for; hence, it is nonsense to consider them shams or purely imaginary ailments, but they must be met in an appropriate manner before any normal mental change can be looked for. The point emphasized is that in their treatment, quite often the pathogenic idea, with all its pernicious train of ill-feeling and vacillating mental and physical states, constitute in large part the pathogenic problem to be overcome.

In the practical application of obtaining relief through the influence of mind on mind or by means of the psychological factor, we find

there are two methods operative. *One of these* is sudden in its effect, as seen in litigation cases after a verdict favoring the plaintiff has been reached or where a long continued hysterical paralysis suddenly recovers. *The other* is more gradual in bringing about the same result; and while the latter may not appear as brilliant as in the former case, yet its results are usually more permanent, and consequently more satisfactory.

Why, in the one case, the result is sudden and in the other more time is needed is sometimes difficult to explain; but we are not now concerned in explaining the occult mechanism of the mind on mind, or whether it be due to conscious, unconscious or sub-conscious influence. That which should concern us at all times is the relief and cure of the patient, rather than the peculiarity of the method by which it is accomplished. When we come to analyze the power by which such apparently wonderful results are attained by these irregular practitioners, we conclude that in its quintessence it is nothing more nor less than that included in the general term—"suggestion."

This powerful therapeutic agent, however, is known under a great variety of synonyms, such as "hypnotism," "Dowieism," "mesmerism," "spiritualism," "faith cure," "magnetic healing," "psycho-therapeutics," and "Christian science." Suggestion, however, constitutes the chief corner-stone upon which all these are reared; but to be potent for good in therapeutics it must embody the various elements which belong to the psychologic factor, which at times require shrewd care and judicious selection, combined with skill in their varied application and manipulation.

For the purpose of its greatest beneficial service the first step is to gain the full and complete confidence of the patient—a task not always easy; but when accomplished the patient must be carefully studied relative to the peculiar mental traits and characteristics, which, in turn, will suggest the birth of the new ideal creation to be established. The treatment, therefore, independent of pharmacology or surgery, embodies an educational scheme which has for its chief purpose the remoulding of the mental forces. The essential qualifications of the newly acquired mental formula to be established should embody the inspiring influence belonging to hope, progress, and co-operation with sufficient force and power as to impress upon the mind of the patient the certainty of recovery. This therapeutic

plan, therefore, is intended to restore to the will its normal control of the emotions and intellect which give birth to not only normal, but also morbid ideas; at the same time teach the patient to become more self-confident, self-dependent and self-reliant—without which all other means of treatment prove futile.

In the accomplishment of this purpose the psychologic factors inherent in the physician himself, and that which constitute his own personality and individuality, must be carefully considered. The very nature and character of his mentality, as well as his methods of examination and other means employed in the case, must of necessity appeal to the intelligent co-operation of the patient as well as favorably impress the mind of the patient as to their potency for good. To attain this end many agents are employed as adjuvants—the most useful of which, perhaps, are electricity, massage, hydrotherapy, dietetics, employment, use of drugs, amusements—of all kinds of which at times have their appropriate indication and special use.

When all these various elements are duly considered and judiciously selected and employed, they often result in producing unusual beneficial results by the establishment of hope for fear, courage for despondency, satisfaction for disappointment, confidence for distrust, peace for obstinate hostility, harmony for discord, happiness for sorrow, and, above all, health for disease. When any physician is able to accomplish this the highest art in medicine has been attained irrespective of the means employed, and the thanks of the patient as well as the conscious satisfaction of having exemplified the power and virtue of your own professional ability in restoring such a sufferer is forever yours.

In conclusion, it is clear that the demands of the age are such as to require us as regular physicians to take another step in advance by recognizing the powerful potency belonging to mental therapeutics.

It should, therefore, be embodied in the curriculum of our medical college education. When this is done, instead of standing idly by as we now do, watching the marvellous results obtained through its influence by others, we shall rather take advantage of this golden opportunity for ourselves, thereby saving the chagrin and ridicule which will surely follow our failure. Indeed, the time is at hand when the regular physician who attempts to practice the healing

art without giving due credence to this part of his education, is wholly unprepared to meet the various exigencies that belong to the relief and cure of morbid nervous affections, beside depriving the patient of the full and complete medical service that justly belong to him. By the recognition and incorporation of this powerful neglected agent in our medical curriculum, as well as its legitimate establishment in scientific therapy, all suspicion of its apparent unethical character will rapidly disappear, and its universal adoption in medical practice will not only win new laurels for ourselves, but also restore the waning confidence of the public in the efficacy of the science of medicine when practically applied.

May the members of this Association no longer allow themselves to be misled or deceived by the wily methods of the quack, but rather recognize for himself the practical utility of the "suggestion art," which, when shorn of its fraudulent vices, embodies virtues of character and possibilities of professional ability—the possession of which will convert many of our former clinical failures into the most gratifying and brilliant successes. May such a privilege as this be ours.

The Sinecure.—"Well, my boy, and what are you going to do now?"

"Well, dad, I don't know. What I want is one of those fancy jobs where you do the least possible work for the very largest possible fee."

"Guess you are cut out for a corporation lawyer, my boy."

"No, dad. I was thinking of being a medical specialist."—*Cleveland Plain Dealer*.

It's All in the Pronunciation.—Old lady to chemist—"I want a box of canine pills."

Chemist—"What's the matter with the dog?"

Old lady (indignantly)—"I want you to know, sir, that my husband is a gentleman."

Chemist puts up some quinine pills in profound silence.—*Ph. Era*.

Was Not Cured.—Butcher—Didn't like that ham? Why, it was some that I cured myself. Customer—Call that ham cured? Why, man, it wasn't even convalescent.—*Boston Transcript*.

Proceedings of Societies, Etc.

SOUTHWEST (VA.) MEDICAL SOCIETY.

This Society had its first meeting since organization at Pulaski, Va., on April 1, 1903. One-half of its members were present, and twenty applicants were elected. The Society now numbers 66, and is an active and enthusiastic organization. The papers were admirable, both in scope and composition, each one being short, practical and pointed, and, as the discussions showed, were interesting to all. Both the papers and the discussions proved that the aims of the Society—to be live, wide-awake, up-to-date, and above all, practical—were being fulfilled to an unexpected degree. The following papers were read:

Some Clinical Cases of Vomiting of Pregnancy, Typhoid-Fever, Puerperal Elampsia, and True Croup, by R. S. Martin, of Stuart, Va.; discussed by Drs. Burke, Bramblett, Hubble, Painter, Green, Sanders, Peyton, Holmes, Edmondson, and Brady. The papers of fifteen-minutes' duration were thoroughly practical, and the discussion, lasting nearly two hours, full of point and practical ideas.

Two Clinical Cases of Club-Foot Successfully Operated Upon, with photographic illustrations, by Dr. P. B. Green, of Wytheville; discussed by Drs. Hubble, Burke, and Brady. These two cases were of especial interest, as they occurred in one family and two successive labors, and tended, from grounds presented, to confirm the theory of maternal impressions. The discussion covered both the condition and the theory as to maternal impressions.

Hasty Ligation of Carotid Vessels, Including Pneumogastric Nerve and Sheath, in a Case of Attempted Suicide, by Dr. R. J. Preston, of Marion, Va.; discussed by Dr. Bramblett, who also reported a case of successful ligation of internal carotid for secondary hemorrhage into orbit and antrum, following gunshot wound; discussed by Drs. Ribble, Graham, Martin, and Brady. The case of Dr. Preston's was also secondary, and the clinical history given. The patient was insane and melancholic, and when he died several months later, discovered a posterior cerebral abscess; an interesting question being as to whether the abscess antedated the ligation, or was a sequence of it. The discussion was bright, lively, and interesting.

Reports were made of a Case of Extra-Uterine

Pregnancy, with Rupture of Sac, by Dr. Peery, of Rural Retreat; and the successful operation for that case, by Dr. John T. Graham, of Wytheville; discussed by Drs. Ribble, Martin, Preston, Burke, Bramblett, and Brady. The questions of diagnosis and treatment, when and how to operate, were thoroughly covered by the discussion, and all congratulated Dr. Peery on his recognition, and Dr. Graham on the successful issue of the case.

A Clinical Cyst, of Undetermined Character, filled with pus, and followed by biliary fistula, was reported by Dr. W. W. Rangely, Christiansburg, Va.; discussed by Drs. Martin, Burke, Ribble, and Brady. This pedunculated cyst was most interesting, and its course most peculiar, though the result reflected great credit upon Dr. Rangely, and proved a text for one of the most interesting discussions of the meeting.

A Case of Hasty Operation for Femoral Hernie, Strangulated, with Intentional Formation of Fœcal Fistula, and Successful Issue, was reported by Dr. W. H. Ribble, Jr., of Wytheville; discussed by Drs. Green, Martin, and Graham.

Dr. Bramblett then presented in person two cases of Tubercular Osteitis in the Os. Calcis in both instances. In one case he had removed the os calcis entire, and a portion in the other. Both were now able to walk comfortably, and showed no signs of return.

After a vote of thanks to the local fraternity for their many courtesies, and deciding to hold the next meeting at Bristol, Va., the Society adjourned, leaving the date of next meeting to be determined by the Executive Committee.

Thus ended one of the snappiest and most practical professional meetings ever held in this section, and if it be a forecast of its successors, the Southwest Virginia Society has before it a future worth observing.

HE KNOWS THE GUILTY PARTY.—The ten-year-old boy who was sent away from home at the time his new brother made his appearance was told by the nurse upon his return that during his absence the stork had brought him a little brother, replied: "Stork nothing; didn't I see Dr. Smith's old mare tied out here last night?"

Book Notices.

Surgical Anatomy. By JOHN B. DEEVER, M. D., Surgeon-in-Chief to the German Hospital, Philadelphia. *In Three Volumes. Illustrated by 499 Plates, nearly all Drawn for this Work from Original Dissections. Volume III—Abdomen, Pelvic Cavity, Lymphatics of the Abdomen and Pelvis, Thorax, Lower Extremities.* Philadelphia: P. Blakiston's Son & Co. 1903. 4to. Pp. 816. Library binding. Paper extra quality.

This is the concluding volume of "*A Treatise on Human Anatomy in its Application to the Practice of Medicine and Surgery*," the first volume of which was issued in the same attractive form in 1899. The complete work forms a treatise of incomparable value to the surgeon and physician. If individuals are financially unable to buy it, several should club together so as to have the work accessible in every community of doctors, so that it may be consulted as opportunity or occasion offer. Volume I treated of the "*Upper Extremity, Back of Neck, Shoulder, Trunk, Cranium, Scalp, Face*"; Volume II, of the "*Neck, Mouth, Pharynx, Larynx, Nose, Eyeball, Organ of Hearing, Brain, Male Perineum, Female Perineum*," while contents of Volume III, are given in the title above. When originally announced, "*Deever's Surgical Anatomy*" was to contain about 200 plates. This number has been gradually increased to 499, the third volume alone containing 178. Viewed only from the artistic effect, these 499 engravings or plates are such as any doctor would be glad to have in his office. But when it is added that they are accurate in every detail as to drawing by skilled artists from original dissections, and that, with them is valuable text matter descriptive of each, with practical suggestions and directions on nearly every page as to how to proceed in surgical dissection to reach a definite point inside the body, the value of the work becomes apparent. We know of no substitute for this *Treatise*. In every particular it far excels any of the text-books on anatomy adopted for students in the various colleges and universities. Nothing short of perfection in anatomical knowledge—which no man possesses—could take the place of this work. To the practitioner of medicine this *Treatise* is of almost equal importance as to the surgeon, for it keeps the practitioner reminded of the

appearance and relationship of parts and organs and tissues, which the surgeon is constantly seeing as he operates. To the casual examiner of the work, it scarcely makes any difference as to which page he opens, he will find with the plate text matter that is descriptive of the parts and statements as to where to locate parts beneath the surface and to where to make incisions to best reach the part desired to be surgically treated. If of so much value to the professional surgeon it is of even greater service to the practitioner, whose surroundings compel him occasionally to treat surgical cases.

Practical Treatise on Materia Medica and Therapeutics.

By ROBERTS BARTHOLOW, M. A., M. D., LL. D., Professor Emeritus of Materia Medica, General Therapeutics and Hygiene in Jefferson Medical College of Philadelphia, etc. *Eleventh Edition. Revised and Enlarged.* New York and London: D. Appleton & Co. 1903. Cloth. 8vo. Pp. 866.

This edition is nearly a reprint of the tenth. Many remedies that would be expected to be discussed in an up-to-date book are not mentioned, and new uses of old drugs are not brought out. Scarcely any authority of the past six or eight years is referred to, so that we see no material improvement over former editions. It is a valuable work on old established uses of the standard drugs of years ago; but we had hoped, in seeing this new edition, to find its teachings more modernized. An immense deal of space for new matter, without enlarging the book, could have been found in either an omission of the authorities added at the end of most of the sections, or in their omission altogether. The clinical index, covering about thirty-two double-columned pages, is a useful part of the book, but is not up to date.

Physiology for Students and Practitioners. By THEODORE C. GUENTHER, M. D., of the Norwegian Hospital, Brooklyn, and AUGUSTUS E. GUENTHER, B. S., formerly Assistant in Physiology in the University of Michigan, Ann Arbor. In one 12mo. volume of 250 pages, with 57 engravings. Cloth, \$1.00 net. Lea Brothers & Co., Publishers, Philadelphia and New York. 1903.

"*Lea's Series of Medical Epitomes*" consist of connected reading matter on definite subjects with well selected authors, intended to facilitate reading and study, with review questions appended to each chapter. Each compact treatise,

therefore, well serves every purpose of the quiz master or the student preparing for examination, and for the general purposes of the practitioner who wishes to refresh his memory as to the "net result." The *Series* was begun in November, 1902, and a volume is issued about once a month, and is edited by V. C. Pederson, A. M., M. D., of New York city.

The Epitome on Physiology above noted is free from discursive matter—giving the established facts of Physiology up to date in a compact little treatise—intended especially for the needs of medical and dental students. It is not intended in any way that this compendious little volume shall take the place of the larger works. The authors have well gathered together a statement of those physiological facts with which the student and the practitioner should be familiar.

Obstetrics, for Students and Practitioners. By W. P. MANTON, M. D., Adjunct Professor of Obstetrics and Professor of Clinical Gynecology, Detroit College of Medicine, etc. In one 12mo. volume of 265 pages, with 82 Illustrations. Cloth, \$1. Lea Brothers & Co., Publishers, Philadelphia and New York. 1903.

This is the fourth volume of "*Lea's Series of Medical Epitomes*," and is an example of skilful condensation; and yet, without superfluous word or phrase, it gives a clear, full statement of facts known about obstetrics. Added to the volume are some chapters on the new born and its management during the puerperium of the mother. It is a good book, although one or two recommendations might be modified, as the italicized lines on page 58, stating that the urine of every pregnant woman should be examined every two weeks *from the beginning of gravidity*.

"A Movin' Medsin."—A colored woman threw the odds and ends of medicine left after her husband's death into the fire. The explosion that followed carried the stove through one of the windows. "Mos' pow'ful movin' medsin I evah saw'd," said she. "No wondah the ole man come dead."—*E. r.*

Editorial.

The Psychologic Factor in Therapeutics.

The recent claims of the "Christian scientists," "faith cures," osteopaths, etc., all over the country—in legislation halls, in public prints, etc.—give a special interest to the paper of Dr. Puntton, in this issue, on the "Psychologic Factor in Medicine," etc. It recalls to memory the controlling power of the doctor in former days, when his word in the family circle "amounted almost to the law and the gospel," and when many marvellous restorations to health and usefulness resulted. As practitioners, we fear we have wandered a little too far from the well-known influence of "suggestion"—of mind upon mind, and of the well-known results of such powers as strong mental impression. We forget that the human body is much under the influence of mental or "nervous impression"—if such term is preferred; and that we have not resolved all the facts connected with man's health of mind and body into facts governed by purely physical or mechanical laws. There are vital forces constantly in operation on the human subjects, which no one has as yet ever understood, that act in a way not explicable by physical laws; and it is upon these vital forces, whether of a psychical nature or not, that we have again to bestow the attention given the subject by our forefathers in medicine, in order to derive results that quacks and charlatans of the present day accomplish. We bespeak a careful reading by physicians of the article alluded to. The author handles it in a scholarly, yet thoroughly practical manner.

Substitutions by Pharmacists.

Messrs. Fairchild Bros. and Foster brought suit in equity in the Circuit Court of the United States, District of Massachusetts, against one Walter L. Conwell, of Boston, for substitution of other products for "Fairchild's Essence of Pepsin" when that preparation was prescribed. The court sustained the complainant, and besides fines and cost, perpetually enjoined the said Conwell from dispensing any other preparation than that of Fairchild's preparations when such were prescribed. This is but one of numerous instances, we are led to believe, where unscrupulous pharmacists, etc., substitute other preparations than those prescribed. There is nothing so good as "a good name" among phar-

macists. And while we have less reason in this section to complain of frauds by pharmacists, still there are some upon whom suspicion rests, and there is ground for the statement that detectives are on the lookout for those who undertake to palm off on the innocent patient "something just as good" as the preparation prescribed, or, even worse, those who palm off, under the name of the reputable manufacturer, preparations that are not genuine.

Rappahannock Valley (Va.) Medical Association.

At the meeting held March 31, 1903, at Fredericksburg, Va., the election of officers resulted as follows: Dr. Barksdale Hales, of Fredericksburg, President; Dr. W. J. Crittenden, Orange, Va., Vice-President, and Dr. W. J. Chewning, Fredericksburg, Secretary and Treasurer. Papers were read and discussed relating to typhoid fever, tetanus, and appendicitis. The attendance was large, including doctors from surrounding counties.

The Southwest Virginia Medical Association

Held its quarterly session at Pulaski on April 1st. This Society has a membership of 63 representative doctors of that section of the State. Its programme was specially interesting to the general practitioner. Dr. E. T. Brady, of Abingdon, is secretary. Bristol was selected as the place for the next quarterly meeting.

The Winchester (Va.) Memorial Hospital

Was opened for the reception of patients March 18th. It has its pay and charity departments—the administration offices being separate but connected. The building cost \$20,000, and is in an elevated, quiet, healthy locality, and yet in five minutes' drive of the railroad stations. The kitchen is an offshoot from the main building—the odor of cooking being carried off through a vent flue. The operating room is thoroughly equipped with unsurpassed facilities for aseptic surgical work. Competent nurses and a skilled masseuse are engaged; the administration of electricity is provided for. The medical and surgical staff is composed of the leading practitioners of Winchester—Dr. Hunter H. McGuire being president. Mrs. Holmes Conrad is president of the Ladies Auxiliary Board.

The Tri-State Medical Association of the Carolinas and Virginia.

At the meeting held at Columbia, S. C., during February, 1903, the interest developed by the South Carolina profession, heretofore rather lukewarm, has been very marked. The hospitalities extended by the Columbia doctors were characteristic of their cordial, whole-souled nature. The meeting was a success in every particular. The attendance was good; some thirty-odd new members were enrolled, and the papers presented were of a high order of excellence. Officers elected for the current year are: Dr. Davis Furman, Greenville, S. C., *President*; Drs. J. H. Marsh, Fayetteville, N. C., J. M. Flodgen, Spartanburg, S. C., and Wm. F. Diewry, Petersburg, Va., *Vice-Presidents*; Dr. Rolfe E. Hughes, Laurens, S. C., *Secretary and Treasurer*; Drs. Albert Anderson, of North Carolina, E. F. Parker, of South Carolina, and W. E. Anderson, of Virginia, *Executive Committee*. Danville, Va., was selected as the next place of meeting, during February, 1904.

The American Urological Society

Meets in New York city the first Wednesday of each month, except July, August and September. The *annual* meetings are held in the city of meeting of the American Medical Association on the last day of that Association and the day following. This year's meeting will be in New Orleans, May 8th and 9th. Dr. Ramon Guiteras is president, and Dr. Ferd. C. Valentine, 31 west 61st street, New York, N. Y., is secretary.

Obituary Record.

Dr. Charles L. Siegel

Died at home at "Lakeside," near Richmond, Va., April 11, 1903, in the thirty-fifth year of his age. He graduated 1891, and was for a year house physician at the Richmond City Almshouse. Afterwards he located in Richmond. In 1901 he had an attack of "grip," which resulted in tuberculosis. Trips were made to Asheville, to the mountains of North Carolina, to Denver, etc., but all to no effect in staying the progress of the disease. A widow and two small children survive him.

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Original Communications.

CASES IN PRACTICE, AND COMMENTS THEREON.*

By R. S. MARTIN, M. D., Stuart, Va.,

Secretary Virginia State Board of Medical Examiners: Ex-President Medical Society of Virginia, etc.

I shall very briefly report a few cases from actual practice—four cases of *vomiting of pregnancy*, three cases of *puerperal eclampsia*, five cases of *membranous croup*, one case of *typhoid fever* and one case of *alcoholic intoxication*. I will confine my remarks briefly to the treatment only of these cases.

VOMITING OF PREGNANCY.

In some cases this is very obstinate and difficult to relieve. You cannot hope for relief in bad cases without local treatment combined with internal medication. In some cases you will have to produce abortion.

Case 1. Mrs. C. was brought to my sanitarium in a very weak and emaciated condition, having been vomiting for several weeks. She was so weak I had to use nutrient enemas to support her. On vaginal examination I found backward displacement of the uterus; this was replaced and supported by means of a suitable pessary and the patient put on oxalate cerium, bismuth and cocaine. Improvement began at once, and she recovered in a short time.

Case 2. Mrs. T. was brought to me a distance of forty-five miles through the country. Emaciated and very nervous; had been vomiting for several weeks and was using hypodermics of morphia and was greatly relieved while under its influence. I found on vaginal examination no displacement of uterus, but a hardened condition of the cervix—did not feel soft like it usually feels in pregnancy. She had all the other symptoms you find in the early months of pregnancy. Her condition was pitiful; the retching, except when under morphia, was dis-

tressing. Pulse about 130 and weak. Realizing the gravity of the case, I put her on the operating table and introduced small strips of iodoform gauze up to the internal os, and placed a cotton tampon of boroglyceride in the vagina against the cervix. The next day I removed and introduced a larger piece of gauze. On the day following I removed the gauze and painted the cervical canal with pure carbolic acid and again introduced boroglyceride tampon. All during this time I was giving large doses hypodermically of strychnia 1-20 to 1-15 grain, and morphia in decreasing doses and feeding per rectum as soon as cervix softened. She began improving and slowly recovered.

This same lady was sent to me again in about two years after first attack in the same condition and was relieved in about the same manner. Cervix was dilated and when softened she began to improve and slowly recovered.

Case 3. Mrs. K. Was called in consultation by Dr. L. Found patient had been vomiting for several weeks; very feeble; pulse 130. I could find no induration about cervix or displacement. I painted cervix with tinct. iodine, placed boroglyceride tampon against cervix and advised keeping this up for several days. Put her on large doses of strychnia 1-20 to 1-15 gr., and rectal feeding. She slowly recovered.

The points I wish to make in reporting these cases are:

1. The value of large doses of strychnia, 1-20 to 1-15 gr.
2. The value of a vaginal examination, to find out the condition of the uterus, whether misplaced, cervix indurated or any other abnormal condition, and if so, to correct if possible.

In the last twelve months I have treated three cases of

PUERPERAL ECLAMPSIA.

Case 1. Mrs. S., living in my town, was seized late one evening. I was seventeen miles from home, but my partner sent for me as soon as he saw the gravity of the case. When I ar-

*Read before the Southwestern (Va.) Medical Society, during its meeting at Pulaski, Va., April 1, 1903.

rived she was just going into the fifth convulsion and was comatose; pulse about 110. I gave her at once hypodermically twenty drops of Norwood's tinct. of verat. viride. This reduced the pulse in about an hour to about fifty pulsations to the minute and produced some nausea, and, with the aid of heat, free diaphoresis.

Dr. McNiel had given her per rectum bromide potash, ʒj; chloral hydrate, ʒss, and had also given ʒgr. morphia hypodermically. As soon as the patient could swallow I gave salts and let her drink freely of water, made vaginal examination and found no signs of labor. She was about six and a half or seven months advanced in pregnancy. We repeated the veratrum in six to eight drop doses by the mouth whenever there was any rise in pulse over 60. This was kept up for about thirty-six hours. After the salts had acted freely the mind cleared and headache disappeared. I made no attempt to bring on labor, as convulsions were under control, and we decided to wait and keep close watch on case.

On the third day after attack labor began and she was soon delivered of a dead child—having felt no movement since the day of convulsions. In this case, she had considerable trouble after convulsions with partial loss of eyesight; urine was loaded with albumen, but by a restricted diet—principally milk and salts and Basham's mixture—the albumen gradually disappeared and eyesight was restored and she entirely recovered.

Case 2. Mrs. S., living in three miles of my home. I delivered her of a living child early one morning, after rather difficult labor. Remained at least one and a half hours after labor, and left the patient doing well. Soon after my return home I was called back to see this patient and found her in convulsions. I at once gave her ten drops Norwood's tinct. of veratrum viride hypodermically; this reduced the pulse. I also gave potassium bromide and chloral by the rectum. She only had one more slight convulsion. Veratrum was continued for two days by the mouth in small doses; salts were given as in other case. She made a good recovery.

Case 3. Mrs. I. I was called in consultation by Dr. McNiel. Patient in labor and having convulsions; child at full term. Gave fifteen drops Norwood's tinct. veratrum hypodermically. Dr. McNiel put patient under chloroform and I delivered the child with forceps at once, as the mouth of the womb was sufficiently

dilated. Child and mother both did well. Same line of treatment was pursued as in other cases and she made a good recovery.

I report these cases to call attention to the value of Norwood's tinct. of veratrum viride in large doses in selected cases. In cases where you would bleed—a strong, robust patient with full pulse—I would advise the use of veratrum. Rapid elimination of the poisons by cathartics and diaphoretics is called for in all cases.

DIPHTHERIA, OR TRUE OR MEMBRANOUS CROUP.

I have treated five cases of true croup in the last eighteen months with Parke, Davis & Co.'s antitoxin. Three recovered and two died.

Case 1. A female child 6 years of age. I was called after she had been sick several days with diphtheria, which had extended into the trachea. I at once gave her 2,000 units of Parke, Davis & Co.'s antitoxin; in twenty-four hours I repeated the dose, giving 1,500 units. I did not have the large tube, or I should have given it.

A short time after the second dose I gave an emetic of ipecac and the vomit contained considerable membrane. During that night she vomited a piece of the membrane which was hollow and about two inches long—a cast of the trachea. She made a rapid recovery.

Case 2. Child about 3 years of age. Was called in consultation by Dr. McNiel. All the usual remedies had been used and case continued to grow worse. Gave at once 2,000 units of antitoxin and my partner, Dr. McNiel, repeated the dose next day, and the child made a rapid recovery.

Case 3. Child about 4 years of age. Was called twelve miles to see the patient, who had been sick with croup for several days. The usual domestic remedies had been used, but the child constantly grew worse. I gave 2,000 units antitoxin and in twenty-four hours the child was out of danger and made a good recovery.

The two fatal cases did not, in my opinion, live long enough after the remedy was given for it to have time to act.

While it is true that in some cases of membranous laryngitis the true Klebs-Löffler bacillus cannot be found, authorities advise it to be treated as if it was true diphtheria.

TYPHOID FEVER.

On August 15th I delivered Mrs. R., age 24, of a healthy male child. Labor normal. She did well for two weeks, when she began com-

plaining. I was not called until three weeks after birth of child, and found her in the kitchen looking after her household duties, but with pulse 120, temperature 103°. For several days the diagnosis was not very clear. I hesitated between two opinions—whether I had a case of typhoid fever or septicemia. Whatever doubt existed was removed on September 15th, when she had two movements from the bowels, both containing clotted blood. The hemorrhage was controlled by local use of ice bag, lead and opium pill and P. D. & Co.'s aseptic ergot hypodermically. The future progress of this case was bad, every symptom being unfavorable—pulse ranged from 130 to 140, temperature 103° to 105°. Bowels frequently moved ten or twelve times in twenty-four hours in spite of all my efforts to restrain them. Large watery evacuations, but no blood, were passing frequently in bed unconsciously.

On October 1st, when the patient's condition was very unfavorable and every symptom pointed to a fatal termination, I decided to use the normal saline solution by hypodermoclysis. I introduced one quart, the part selected for the injection being the anterior parts of the abdominal walls. In a short time there was a decided improvement in her symptoms—pulse stronger and less frequent; temperature, with every other symptom, improved. In three or four days the patient's condition again became alarming. I repeated the saline solution, using this time three pints. She again improved, and under appropriate treatment gradually recovered.

I was led to use the normal saline solution in this case from an experience I had in using it in a case of cholera morbus—seeing the patient with cholera morbus—a strong, robust man—in consultation, after he was in what seemed to be a hopeless condition—vomiting and purging still going on and the heart's action very quick and feeble. The patient was in a state of collapse when the normal saline solution was used—introducing at least three pints in the abdominal wall. I also used hypodermics of morphia and strychnia as indicated. Such marked improvement immediately followed that I thought his recovery was in a great measure due to the use of the saline solution.

I am of the opinion that, in all conditions where there is rapid loss of the watery elements of the blood, as in cholera morbus or profuse diarrhea from whatever cause, the saline solu-

tion by hypodermoclysis is of the same value as when used for severe hemorrhages or shock following prolonged operation.

SERIOUS ALCOHOLIC INTOXICATION.

During the Christmas holidays I was called about 7 P. M. to see a boy 8 years old who had drunk one pint of apple brandy. I reached him at least two and half or three hours afterwards; found him in comatose condition; he could not be reused to take anything; pupils dilated, reflexes lost. Gave him apomorphia 1-15 gr. hypodermically. In a few minutes he vomited freely a part of the brandy. After he finished vomiting I gave him strychnia hypodermically every four hours. His pulse and respiration improved, but all efforts failed to wake him until about 8 A. M.—having been in stupor for at least fifteen hours. He made a good recovery.

Points of interest in this case are the age of patient, quantity of brandy drunk and results.

SURGERY OF SPLEEN.*

By BENJ. MERRILL RICKETTS, Ph. B., M. D., Cincinnati, O.

Anatomy. The spleen is a ductless gland situated behind the pancreas. It is highly vascular, soft and brittle. The gastro-splenic omentum and folds of the peritoneum connect it with the stomach and hold it in position, connecting it, more or less, with the kidneys, sometimes with the diaphragm. At birth its size is 1-350 of the body weight, and in the adult life 1-320, decreasing in old age to 1-700. It is larger during digestion and greatly influenced by the character of food. Various fevers cause it to enlarge.

Blood Supply. Splenic artery arises from the aorta. It is large, tortuous and divided into four, five or six branches, which enter the hilum of the spleen and ramify throughout its substances, receiving sheaths from an involution of the external fibrous tissue.

There have been 188 contributions to this subject.

Abnormalities are found in all animals, varying from one to several spleens in number and

*Original abstract of a paper prepared for the Southern Surgical and Gynecological Association, at Columbia, S. C., February, 1903.

located anywhere in the abdominal cavity, or there may be the entire absence of the spleen, whether congenital or from disease. When absent there is general compensatory lymphatic hyperplasia.

Historical. Nenci, 1763, and Abernathy, 1793, each give an account of uncommon formation of the spleen. Cheselden, 1831, reported three spleens found in one human body. Lebbv, 1846, and Ramsey, 1850, each mention a case of the entire absence of the spleen in a human body.

There have been about thirty-six contributions to this subject.

Displacement. The spleen may occupy any position within the abdominal cavity, whether due to injury, disease or relaxation of its ligaments from any cause. Kreysig, 1746, was one of the first to describe displacements of the spleen. Velasco, 1875, mentions a case of displacement of the spleen in an infant. Collins, 1895, reports a case of the spleen in the pelvis.

There have been something more than thirty-seven contributions to this subject.

Experimental. It has been many times demonstrated that both man and the lower animals can live without a spleen.

Historical. One of the earliest to experiment upon the spleen was Deisch, who, in 1735, worked with dogs concerning the surgery and physiology of the spleen. Chailly, 1822, made an extensive report on his research work concerning the functions of the spleen. Kuchenmeister, 1851, experimented upon the spleen to determine the influence of quinine, gentian and squills upon it. Philipeaux, 1866, experimented to demonstrate that the spleen taken from young animals and replaced in the abdominal cavity becomes grafted and develops or continues to have life, and functionate as a normal spleen. Von Limbeck, 1889, published his experiments upon the spleen and its effect on leukocytosis. Lote, 1901, made many experiments upon the spleen and its relation to anthrax.

Something like ninety-three contributions have been made to this subject.

Injuries of Spleen. Lacerated and incised injuries are of many varieties; many will recover without operation. The spleen may rupture as the result of disease or injury. Spontaneous rupture of the spleen is highly improbable.

Historical. Vanselow, 1696, reports a case

of rupture of the spleen. Campbell, 1836, records a case of rupture of the spleen and kidneys. Aufrecht, 1866, reports a case of rupture of the spleen in tuberculosis. Whitney, 1869, records a case of laceration of the spleen in pregnancy. Chrostowski, 1884, considers at length ruptures of the spleen in the course of abdominal typhus.

There have been about 184 contributions to this subject.

Tuberculosis. The spleen resists this disease to a very high degree. Rarely primary it may yet involve a part or all of the gland, usually found at autopsy or by exploration. It is slow or rapid in its course, and probably never recovers spontaneously. Tuberculosis demands the radical removal of a part or all of the spleen. Drainage may not be necessary after such an operation.

Historical. Palm, 1838, recorded a case of tuberculosis of the spleen. Sibley, 1857, reports a case of tuberculosis of a spleen in a child suffering from purpura. Anche, 1901, reports a case of primary tuberculosis of the spleen.

Twenty-one contributions have been made to this subject.

Gangrene is a rare disease of the spleen, and is usually due to obstruction of the blood supply by thrombosis, calcareous deposits, new growths or injury. There are but two such cases reported. Most radical surgical measures, such as drainage and the removal of incised tissue, is demanded.

Syphilis is infrequent. It may cause hypertrophy, gummata, a local or general splenitis. One or more small cysts may be present, all of which will disappear under the influence of syphilitic remedies.

Historical. Naudier, 1867, records a case of hypertrophy of the spleen probably due to syphilis. Moxon, 1870, reports a case of syphilitic splenitis.

About fifteen contributions have been made to this subject.

Ossification. Deposits of calcareous and bony tissue may be found in the spleen, single or multiple, and vary in size from a millet seed to two or more inches in diameter. Their presence may cause splenitis, resulting in one or more abscesses to become infected.

Historical. Rudnicus, 1672, records a case of bony deposit in the spleen. Bampffield, 1821, reports a case of a large encysted ossification

arising within the spleen and attached to the left lobe of the liver. Murray, 1878, reports a case of cartilaginous degeneration of the capsule of the spleen. Sailer, 1897, records a case of calculus of the spleen.

About eighteen contributions have been made to this subject.

Anthrax, called splenic apoplexy, malignant pustule, black leg and quarter evil, is seldom found in man. Injection of carbolic acid will cure many cases. Free incision will also cure many cases. Zappulla, 1899, reports a case of malignant pustule injected with argenti nitras, followed by recovery.

More than fifty contributions have been made to this subject.

Abscess of the spleen may be acute or chronic, usually acute, and involves a part or all of the gland. They may be single or multiple. It is usually due to infection of various kinds of cysts and traumatism. Simple splenitis may become infected and result in abscess. The most frequent way to rupture is into the stomach; but it may recover spontaneously. Diagnosis uncertain, but surgical treatment is well established.

Coze, 1700, reports one rupturing into the stomach. Schlichting, 1733, reported a case of splenic abscess, which ruptured and passed through the vulva. Jacquinelle, 1791, mentions a splenic abscess, which discharged its contents into the colon. Hickman, 1831, reports a case of abscess of the spleen which ruptured into the stomach and umbilicus. Mantell, 1853, records a case of splenic abscess, which discharged into and through the left lung.

More than one hundred contributions have been made to this subject.

Echinococcus. Incision and drainage of these cysts is most satisfactory. In a few it may be necessary to remove a part or all of the spleen. Bouillard, 1825, mentioned a case of hydatids of the spleen. This is among the earlier reports upon this subject.

There have since been about seventy papers contributed to this subject.

Hemorrhage. Hemorrhagic cysts of the spleen are rather infrequent, and due to injury and many kinds of disease. They should be attacked through an opening in the abdominal wall large enough to give ample space for incision and drainage. Buse, 1778, mentions a case of "De Sanguine splenica conjectural." This report is exceedingly interesting and ranks among the first.

Something like twenty contributions have since been made.

Carcinoma is very infrequent and generally involves the parenchyma of the spleen. It may be primary or secondary, and usually originates upon its surface when primary, which is the rarest form. It may be slow or rapid in progress, and may have one or more cysts, which may rupture.

Historical. Forseca, 1619, records a case of carcinoma of the spleen. Gerber, 1655, reports a case of carcinoma of the spleen. Verite, 1893, gives the diagnosis and history of a primary epithelioma of the spleen.

Sarcoma. About the same frequency as carcinoma; usually primary and of slow growth. It is hard, as a rule, and due, probably, to trauma.

Historical. Orpen, 1858, reports a case of sarcoma of the spleen. De Ritis, 1879, records a case of primary lympho-sarcoma of the spleen.

There are forty papers reported of various malignant growths of the spleen.

Splenotomy. Incising the spleen has been done for many purposes, such as opening abscess, cysts, removal of neoplasms, foreign bodies and lacerated portions. Exploration of the spleen has also been done where these conditions did not exist—merely for diagnostic purposes.

Historical. Young, 1801, applied the actual cautery to cure an enlarged spleen. Hammond, 1878, successfully aspirated with recovery. Mori, 1878, removed an echinococotic cyst by incision. Monod, 1878, made a successful puncture of the apex of the spleen for a hydatid cyst. Goslin, 1880, reports a case in which he used a hypodermic injection of ergotone into the spleen for chronic enlargement. Wallace, 1882, successfully punctured an abscess of the spleen with complete recovery. Peiper, 1883, injected Fowler's solution into a parenchymatous spleen for leukemia. Vidal Garcin, 1884, punctured a splenic cyst and injected it, resulting in a cure. Fountain, 1890, reports a case of abscess of the spleen in which he operated and drained with recovery.

Aspiration has been successfully accomplished, but the needle must never be thrust into a splenic cyst until after the abdomen has been opened.

Splenectomy. Removal of the spleen was done by the ancients that runners might increase their speed. Life may be maintained without the presence of a spleen. A part or

all of the spleen may be removed without causing death. The progress of surgery shows that from 1865-1875, mortality was 80 per cent.; from 1876-1885, mortality 45 per cent.; from 1886-1895, mortality 20.68 per cent., and from 1896-1903, mortality 12 per cent. These per cents. are for total extirpation. It may be necessary to remove a part or all of the spleen, especially if it should become gangrenous from strangulation and in cases of hernia of long standing.

Historical. Clark, 1673, mentions a case of resection of the human spleen. Cruger, 1685, reported a case of excision of the human spleen. Larry mentions having seen three cases of laceration of the spleen by weapons, all of which recovered. Leveille records a sabre wound of the spleen with recovery ensuing. Quittenbaum, 1836, extirpated a spleen for hypertrophy. Dunglison, 1845, removed the spleen for dislocation. Harley, 1857, exhibited specimens of a living rat from which both the suprarenal capsules and the spleen had been removed. Gibb, 1862, removed a fifteen pound spleen from a dog. Pean, 1867, made a complete extirpation of a cyst of the spleen in a woman 20 years of age, and in 1869 he made a splenotomy, at the same time removing both ovaries. Schumann and Bryant, 1868, each made a complete splenectomy for hypertrophy attending leukocythemia. Powell, 1868, removed a diseased spleen and the suprarenal capsules from a patient suffering from tuberculosis. Philippeaux, 1870, made a complete transverse section of the spleen. Peiper, 1883, injected Fowler's solution into a parenchymatous spleen for leukemia. McGraw, 1888, excised a dislocated spleen, and the patient subsequently expectorated the ligature of the pedicle. Postempski, 1888, reports a case of laceration of the lung due to contusion, on which he made a laparotomy for exploration and splenectomy. Helmut, 1888, reports a case of spindle-celled sarcoma of the spleen in an infant 18 months old, in which he made a splenectomy, the tumor weighing nine and one-half pounds. Delatour, 1895, records a case of thrombosis of the mesenteric veins as the cause of death after splenectomy.

Splenopexy. Anchoring the spleen to the posterior abdominal wall, especially for the aggravated forms of "wandering spleen," has been done several times. Greiffenhagen, 1891; Plucker, 1895; Heydenreich, 1896, each succeeded in anchoring a wandering spleen.

Splenorrhaphy. Suturing the spleen is done to anchor it in place, and to close lacerated or incised portions. Zikoff, 1895, reports a case of laceration of the spleen, which was successfully sutured. Catgut and fine silk are the most desirable materials for this purpose.

More than 435 contributions have been made to surgery of the spleen.

Fourth and Broadway.

TWO CASES OF CLUBFOOT ASSOCIATED WITH MATERNAL IMPRESSIONS.*

By PEYTON B. GREEN, M. D., Wytheville, Va.

I have prepared no formal paper for this occasion, but I have made some notes of two cases which have come under my observation, and which may be of some interest to you.

In calling your attention to these cases, I shall not enter into a discussion of the subject of maternal impressions, but will merely state the facts as they occurred, and leave you to draw your own conclusions.

Bettie B., the mother, is 36 years old, in good health, very large and muscular and of rather less than average intelligence. She is illiterate, superstitious, very prejudiced in her opinions and believes in signs and omens.

Until recently she has been for a long time an inmate of the Wythe county poor-house. She has no physical disability, but because of her frequent confinements, a surly disposition and an inherent laziness, she has not been able to get a position as servant, or, having secured one, to retain it. Consequently, she has been a public charge for a number of years. Some eight to ten years ago she contracted syphilis, from which she seems to have entirely recovered. She has had seven children, with probably as many different fathers. There are four boys and three girls, and their ages range from 16 years to 9 months. The first four children have no unusual histories. The fifth child, a girl, had a rising in her head, and is now deaf and dumb. The sixth child, a boy, was born with an exaggerated case of talipes equino-varus of each foot—in fact, the most extreme case which I have ever observed.

I hand you for your inspection a photograph.

*Read before Southwestern (Va.) Medical Society, at meeting at Pulaski, Va., April 1, 1903.

taken when he was nearly 2 years old. At that time he was a hopeless cripple. In his efforts to stand erect by pulling himself up by a chair or other piece of furniture the external malleoli



had become inflamed and each was covered with a sore about the size of a half dollar. The boy was born in June, 1898, and I operated upon him in May, 1900. Each tendo Achillis was severed subcutaneously, and then the inner aspect of each foot was incised down to the bones, and the tendons and plantar fascia divided. The feet were then forcibly manipulated and put into a position of extreme abduction. They were held in this position, a piece of sterilized rubber placed over the wound, the foot wrapped in sterile gauze and a plaster of Paris bandage applied and left on for several weeks. When, however, the bandages were removed it was found that in spite of the extreme force used in manipulating the feet, the deformity still persisted to some extent. The operation was repeated in July. The bandages were removed in three weeks and the result found to be perfectly satisfactory. A pair of clubfoot shoes were fitted to the patient and worn for about five months. Then they were left off, because the boy complained that they hurt his feet, and because the mother was too lazy and indifferent to make him wear them. The second photograph, which I now hand you, was taken in August, 1902, a little over two years after the second operation. This child can now walk flat-footed and wears an ordinary pair of shoes with no inconvenience whatever.

The seventh child, a girl, was born about the 1st of July, 1902. I had hoped to be able to show you her photograph at this time, but her mother is now in West Virginia and I was

unable to secure the photograph for this occasion. However, I will remark that she has talipes equino-varus of each foot fully as marked as that of her brother. I hope within a few



months to operate upon this case also. When about four months advanced in her gestation—with the clubfooted boy—the mother, who was then at the poor-house, was given a live turtle to kill and clean for the cook. She did so, but for a long time she could not keep from thinking of it, and finally she became imbued with the idea that her child would be born with feet and hands like the feet of a turtle. When she was delivered her first question was as to whether the feet were all right.

About sixteen months after her child was operated upon she became pregnant again, and during her entire gestation she was harassed with the fear that her baby would be marked like the one preceding it. I regret to say that her fears have been fully realized, and that the little girl's case of clubfoot is almost an exact reproduction of the case of her little brother.

There is no history of heredity in either case.

DIPHTHERIA.*

By O. C. KESSLER, M. D., Ravenwood, Mo.

Without entering into an elaborate discussion of the manifold pathological forms of diphtheria, we will consider that only which the busy, general, every-day practitioner meets with in his routine of work.

*Read before Missouri Valley Medical Association during its session at Council Bluff, Iowa, 1903.

We also omit in detail the various controversies that have arisen as to the nature of the virus of diphtheria. Suffice it to say that diphtheria is an infective disease, met with chiefly in children, and, in years past, was considered one of the most fatal maladies of childhood. The virus enters the system usually by the mucous membrane of the pharynx, and first of all sets up local inflammatory changes there—this seat of inflammation forming a nucleus from which the entire system may become poisoned by the micro-organism peculiar to the disease, thereby converting a local into a constitutional disease of greater or less disturbance.

In the pharynx, the process begins with the formation of small, round, grayish patches on a red, swollen base. The grayish film is at first thin and soft, but presently it becomes thicker or more yellowish; or, if hemorrhage takes place, it becomes brown or black. The patches may be few and isolated, or numerous and confluent, and often form large, dense masses of false membrane, according to the severity of the case. At first the patches or masses are adherent to the underlying tissue; afterwards they are loosened and can readily be removed or cast off spontaneously. Often the underlying surface of the mucous membrane appears intact. It is reddened, but there is no loss of substance in a case of superficial diphtheritis. In other cases a visible erosion or ulcer remains when the false membrane is removed. This indicates deep or parenchymatous diphtheritis, denoting that the necrotic inflammation has extended still deeper into the mucous membrane.

While the specific principle is ordinarily received by the inspiration of infected air, it is frequently received by direct contact of the infected matter with one of the mucous surfaces not lying in the respiratory tract.

It is impossible to form any probable conjecture in regard to the time when diphtheria originated. Aesclepiades, who lived one hundred years B. C., scarified the tonsils and performed laryngotomy for the relief of respiration, and it is supposed he treated diphtheria. Aretæus, a Greek physician of Cappadocea, at the commencement of the Christian era, gives in writings still extant a clear and accurate description of mild and severe diphtheria. After describing what he designates as ulcers upon the tonsils, covered with a white, livid or black concrete product, adds, if the malady invades the chest by the trachea, it causes suffocation on the same day.

Children, up to the age of puberty, are most susceptible to the disease, and it is an established fact that diphtheria does not originate of itself, but is produced by the reception of the pre-existing specific poison.

The extreme contagiousness of diphtheria is well known. It has been known to be communicated upon very light exposures, and, in other cases, it has been conveyed from infected rooms or clothing where patients had been treated for diphtheria weeks, or, perhaps, months previously; but, fortunately for the treatment and mortality of diphtheritic patients, the greatest virulence of the contagion extends only a very short distance from the patient.

The prognosis of diphtheria varies greatly in different cases, according to the type. In some epidemics the disease is of a very mild type, and recovery occurs with very simple measures, while, in other epidemics, the disease appears in its most malignant form and the mortality heretofore has been very great, in spite of the most heroic treatment. In the past physicians of extensive experience were very guarded in their expression of a favorable prognosis in diphtheria, since there is no other disease in which the prognostic signs on which a favorable prediction is based are so likely to be fallacious.

The treatment of diphtheria has been the all-perplexing problem to solve. It has been almost as varied as there are remedies in the materia medica, embracing from the local application of lunar caustic to the internal administration of corrosive sublimate, and all along the line, meeting with the one and same general, unfavorable and unsatisfactory result.

While diphtheria has been one of the most fatal maladies, and considered by many to be the most highly contagious, and, therefore, the most dreaded of diseases peculiar to children, there has been in recent years a remedy introduced, based upon the theory of the Klebs-Löffler bacilli, that is destined to entirely revolutionize the treatment of diphtheria. Such a remedy we find in diphtheria antitoxin, which, according to my experience, is the remedy par excellence.

We will not here dwell upon the merits of the different makes and *modus operandi* of the antitoxins that are placed on the market, but will give a few cases in which it has acted very favorably for me. My personal experience in the use of diphtheritic antitoxin has been somewhat limited and experimental and confined to

within the last few years, the reason for which was that I, like many others, was slow to accept measures that had not been fully proven; and, for brevity's sake, will mention the following three cases only, as they show a diversity of character in the disease:

Case 1. A boy 12 years old was seen August 10th. There was an extensive membrane on both tonsils, posterior nares and great faucial inflammation. Patient could not swallow even liquids and was much distressed. This was in the forenoon. I injected 10 cc. antitoxin. At the evening visit patient was much better, the voice more distinct and the patient expressed himself as feeling better. The improvement was so great, I did not repeat the injection until next morning, when same dose was repeated. Recovery was rapid and complete, with no sequelae.

Case 2. A girl, aged 2 years, was seen October 3d at 10 P. M. Patient was suffering great dyspnea; throat, tonsils and posterior nares covered with thick, yellowish membrane; larynx highly inflamed and great stenosis. I injected 5 cc. antitoxin; in twelve hours patient was much improved, and in six hours more—4 P. M. next day—I injected more of the antitoxin. Patient recovered with difficult articulation and regurgitation of liquid and food through nostrils. Patient gradually improved.

Case 3. Girl 7 years old was seen October 13th at 3 P. M. Patient pallid, nervous, restless and breathing hard; grayish yellow patches on tonsils and in throat. I injected 10 cc. antitoxin and saw patient eight hours later, and, as she was resting more quietly and comfortably, did not repeat the injection. At 10 next morning, patient was more restless again and appeared to be not so well. I injected 10 cc. more of the antitoxin. Patient recovered with weakness of the knees and slight turning in of the toes, which was quite persistent, but slowly yielded to treatment.

In the above cases such internal remedies were given and local treatment applied as was deemed requisite in each case. The cases, however, being of such short duration, I think was due to the specific treatment used, and, while a degree of infection was quite extensive, the rapid yielding of its intensity shows that, in this remedy, we have a specific.

Other cases I might mention have all been reduced in virulence, and this, I think, was due to the antitoxin treatment which, in my experience, has been a safe rock to anchor on.

CASE OF STRANGULATED FEMORAL HERNIA OPERATED ON UNDER MORPHINE.*

By W. H. RIBBLE, M. D., Wytheville, Va.

Mrs. B., white, age 62, had been an invalid from heart and liver trouble for about fifteen years. When first seen—December 16, 1901—she gave a history of a hard tumor in the left femoral region, which she had noticed for five years, gradually increasing in size. She had avoided mentioning its existence, fearing operation.

December 13th bowels didn't move; pain commenced in the tumor. On 14th and 15th there was still no action and tumor was larger and more painful. Becoming alarmed she consulted me on the 16th.

The tumor, upon examination, revealed a hard mass of omentum and a knuckle of the sigmoid flexure, both of which proved irreducible. Believing her unable to stand herniotomy, efforts were made with a rectal tube to move the bowels, and it was found that some gas and enough fecal matter to slightly color the enema was finding its way through the hernia.

On the 22d, the enema returned clear, and no gas passed.

On the morning of the 23d severe vomiting set in and the bowels became rapidly distended. Two surgeons were called in consultation and they decided that the patient would die without operation and would most surely die with it, on account of the feebleness of her heart action, her pulse being not perceptible. I suggested giving her the chance of operation under morphine, and she bravely agreed to it.

At 7:30 P. M., December 23d, I gave $\frac{1}{4}$ gr. morphine with atropia and began preparation for operation. At 8 P. M. the dose was repeated and at 8:15 operation was begun. Suprarenal liquid with chloretone was freely injected over the tumor, its superficial coverings were drawn up and transfixed. The sac, when opened, was found to contain a hard mass of adherent omentum, which I had to dissect loose with scissors. The knuckle of bowel was congested, but in good shape, containing gas and some fluid, no solid substance. Reduction of either bowel or omentum was impossible till the ring was enlarged with a herniotomy knife. This was done and the operation hurriedly concluded in the usual manner.

*Reported at the Southwestern (Va.) Medical Society, during its meeting at Pulaski, Va., April 1, 1903.

The patient was perfectly quiet and didn't flinch or grunt, except once, when I attempted to stretch the ring before cutting it. After putting her in bed she became profoundly stupid and continued so for four hours, when the bowels commenced running off. The actions were profuse for twelve hours.

The patient made a nice recovery and has enjoyed better health the past year than for several years previously, but is wearing a truss.

MOUTH BREATHING.*

By CLIFTON M. MILLER, M. D., Richmond, Va..

Demonstrator of Anatomy and Instructor in Diseases of Eye and Ear, Medical College of Virginia; Attending Surgeon Eye, Ear and Throat Department City Dispensary, etc.

The physiologic function of the nose, other than that connected with the sense of smell, has been, until recent years, so much neglected that a writer on physiology, whose work was published in 1882, mentions no other; and in speaking upon the organs of respiration he says they are the larynx, trachea, bronchi and their terminals. In the same work, we find stated that the moisture found in the expired air has been derived from the pulmonary mucous membrane. More recent observations list the physiological functions of the nose in the order of importance as (1) respiratory, (2) olfactory, (3) phonatory, (4) auditory.

The inspired current of air enters through the anterior nares, where it encounters the vibrissæ, which mechanically free it from the coarser particles. From the general structure and outline of the nose, as would be inferred, the in-going air current passes to the upper portion of the nose and thence back to the pharynx by way of the middle and superior meatuses. It is in the passage along this channel that the air is saturated with moisture by evaporation from the turbinates, and at the same time brought to the body temperature. This channel for the passage of the air traverses the area where the largest capillaries of the body are located, and those, too, whose calibre is most delicately controlled by the vaso-motor nervous system. So finely adjusted is this nervous mechanism that the variation in the amount of watery vapor in the inspired air is

recognized and the amount of serum poured out from the capillaries immediately controlled. Whether or not this secretion has a bactericidal effect has not been finally proven, but there is no doubt of the fact that pathogenic bacteria are mechanically entangled on the moist mucous membrane and are conducted toward the naso-pharynx by the action of the ciliated cells and then expectorated.*

Pneumococci, staphylococci, streptococci and numerous other pathogenic bacteria have been demonstrated in the nasal chambers while the air that has reached the pharynx is practically germ free. At the same time that the air is mixed with moisture and mechanically freed from its deleterious constituents, it is brought to about the body temperature, so that it enters the remainder of the air tract without producing any irritative effect. As a preliminary to the in-rush of the inspired air current, there is a rarefaction of the air column from the trachea upward, which rarefaction aspirates the air from the accessory sinuses, all of which empty into the infundibulum or upper meatas, and it is conceivable that this air, which has rested for an appreciable length of time in these cavities, contributes decidedly to the warming and moistening of the remaining air, which takes only a fraction of a second to traverse the somewhat tortuous path to the pharynx. The olfactory nerve terminals being distributed only over the surface of the superior and middle turbinates and the upper portion of the nasal septum, the direction of the inspired air current is just such as to carry odoriferous particles to the point where they can be appreciated.

The nose, with its accessory cavities, is the sounding-board of the voice, giving to it timbre and resonance. The entrance of the eustachian tube into the naso-pharynx serves the purpose of ventilation of the middle ear and equalizing the air pressure upon the inner and outer sides of the delicate membrana tympani. By no means last in point of importance is the influence exerted upon the circulation at the base of the skull by nasal respiration, every inspiration emptying the ethmoid veins and through them the longitudinal sinus and cavernous plexus.

*Since the completion of this paper the following has come to my notice: "The nasal mucus is a bactericide for staphylococcus and pneumococcus, but not for bacteria coli communis and Eberth's bacillus."—Stuart Low, *Annals Otol., Rhinol. and Laryngol.*, xi, 4.

*Read before the Richmond Academy of Medicine and Surgery, March 24, 1903.

From the foregoing review of the physiologic functions of the nose, it will be readily seen how important to the physical welfare is nasal respiration and how far-reaching will be any interference with the normal conduct of it.

In consideration of the many *causes* which give rise to the condition of mouth breathing, first and most important will be *naso-pharyngeal adenoids or hypertrophy of the pharyngeal tonsil*, and with that pathological state and its baneful results will I deal more particularly in this paper.

The naso-pharynx in children is not only actually, but also relatively, smaller than in adults, and at birth can scarcely be termed a cavity at all, and does not reach the adult proportionate size until about the sixth year. While adenoids are not confined to infancy or childhood, it is in these periods of life that they are most frequent, and at the same time their evil effect is felt; for during this time the organism is less resistant to pernicious influences, and anything that interferes with the physiological function of an organ or part will retard its growth and development, and in obedience to the well-known law of correlation of development, distant parts may be interfered with to a lesser, though appreciable, degree.

A recent investigator, in a series of experiments upon guinea pigs, confined them to an atmosphere laden with a mixture of starch powder and nitrate of silver. A histological examination of the lung of the animals which had been breathing this atmosphere showed that the epithelial lining of the lung was two, seven or sometimes twelve layers in thickness in contrast to the normal one layer. This fact led him to formulate an hypothesis that there was in mouth breathing a thickening or swelling of the air vesicles, which would give rise to an interference with the interchange of gases in the lungs; and thus the blood is under-oxygenated and surcharged with deleterious waste products which should be eliminated by its passage through the lungs. This hypothesis, while it has not been proven by histological examination of the human lungs, seems to me to be a most reasonable one, for nature's tendency to protect any part from irritation or injury is too well known to need any emphasizing; and that air, entering the lungs insufficiently filtered and moistened, is an irritant to the delicate lining cannot be denied.

The picture of the habitual mouth-breather

is an unmistakable one—with mouth open, face lacking in expression, flat chest or chicken-breasted and deficient respiratory movements, a lack of mental alertness and interest in their surroundings. Aproxia or lack of concentration and attention is a term that has been much used in describing these children, but it has also been much abused—the apparent lack of attention being often due to deficient hearing. The speech is thick, defined as talking through the nose, though this is just what it is not, for the flat and colorless speech is due to the non-participation of the nose in phonation.

Air, when breathed through the mouth, is using a channel which is not physiologically formed to prepare it for its reception in the lungs. Almost sufficient warmth is furnished, and this air reaches the pharynx but one-half to one degree lower in temperature than would have been the case had it passed through its normal channel, the nose; but here its preparation ceases, and it passes unmoistened and unfiltered into the upper respiratory tract. This gives rise to a state of chronic inflammation of the mucous membrane of the mouth and pharynx, which makes them less resistant to bacterial invasion, and to this very thing they are subjected with every breath taken. Osler says: "A special predisposing factor in lymphatic tuberculosis is catarrhal inflammation of the mucous membranes, which, in itself, excites slight adenitis in the neighboring glands." And Wright says: "We must assume at present that the tubercle bacillus passes into the lymphatics through the mucous membranes of the naso- or oro-pharynx in a very large proportion of cases of pulmonary infection." The system, already lowered by the improper oxygenation of the blood, is subjected to the greater strain of air infected from bacteria being brought to a non-resistant barrier, the mucous membrane of the mouth and pharynx in a state of chronic catarrhal inflammation. Anemia is caused by deficient oxygenation of the blood and the retention of waste products in its current.

These same causes give rise to mental hebetude and deficiency, so that the mouth-breather not only looks stupid from the facies which it imparts, but is mentally less alert than he otherwise would be as a result of the interference with the purification of the blood in the lungs. The more or less constant swallowing of the muco-purulent secretion from the chronic catarrh of the naso-pharynx, nearly always pres-

ent in these cases, gives rise to gastro-intestinal irritation, with all of its attendant evils. Stunted growth may, and frequently does, result from the foregoing conditions alone or in conjunction.

As a result of the non-performance of its physiological function, the nose does not properly develop and the bones of the face also are undeveloped. We find also chronic inflammation of the nasal mucous membrane due to the stasis of the blood, which is not freed from its serum by atmospheric contact, and we soon see a pathological secretion, more or less profuse, constantly poured out. The hard palate, instead of being a gentle curve, assumes a high arched shape, and this gives rise to a deflection of the nasal septum, and the secondary teeth when erupted are irregular in their location and relative positions. The ear assumes a condition of retracted drum and lowered hearing on account of the absorption of the air contained in the middle ear and the impossibility of its removal so long as the naso-pharynx is not utilized as a passageway for the inspired air, or else we see a state of chronic catarrhal or purulent inflammation of the middle ear and consequent impairment of hearing.

So great is the menace to the functional activity of the ears of all nasal conditions, particularly those that lead to stenosis, that it has been well said by a prominent otologist that, "if the rhinologist of this generation does his full duty the otologist of the next will find but little to do." Interference with nasal breathing is apt to give rise to hyperæmia of the meninges, with headache, night terrors, enuresis, or even epilepsy as a result.

I do not claim to have set forth anything new or original in this consideration of the evils attendant upon mouth-breathing, but it cannot be too forcibly impressed upon us that we have not done our full duty to those patients who come to us for the treatment of any condition that may result from the improper performance of the nasal function until we have put the nose in a condition as nearly approaching the normal as possible, with the in-going air current fairly equally distributed between the two sides of the nose; for a deviated septum or any condition giving rise to stenosis of one side of the nose will cause many of the symptoms of mouth-breathing, there being not sufficient warmth or moisture supplied by one side of the nose for a volume of air which nature has intended should

be conducted over mucous membrane of twice as much area.

In summing up I would say:

1. The nose is the guard at the gateway of respiration.
2. Any condition, such as adenoids, deflected septum or hypertrophy, that leads to a nasal stenosis and consequent mouth-breathing, is a menace to general health.
3. The nose can no longer be considered as merely two "blow holes" for the entrance of air and appreciation of odors, but has a most important physiological function to serve.

7 N. Third Street.

DISCUSSION.

Dr. W. F. Mercer is convinced that mouth-breathing is considered of little or no importance by the general practitioner. The far-reaching and disastrous influence of mouth-breathing, especially in the growing child, is not to be ignored; and the idea that adenoids, the most frequent cause of the condition, would atrophy or become absorbed at puberty, is, in a number of cases, erroneous; for often patients at 20, 30 or even 40 years of age have adenoids, and are mouth breathers. Even though they atrophy, they exist long enough to establish results, in many instances permanent. He emphasized the susceptibility of these patients to infectious diseases, especially pulmonary tuberculosis. In mouth-breathing, especially in very young children, the lungs expand very imperfectly. "The chest becomes thin and flattened, the intercostal spaces are depressed, and the infra- and supra-clavicular regions retracted." The thoracic muscles become small and poorly developed. Air, not being cleansed, warmed and thickened, irritates the pharynx, larynx, trachea and bronchi, which become inflamed, resulting, as had been shown by Ballinger, in thickening of the endothelial lining of the air vesicles, and, as pointed out by Dr. Miller, in great interference with the normal interchange of gases in the lower respiratory tract. These conditions are frequently accompanied with some spasmodic cough; there is constant tendency to take cold, and attacks of catarrhal croup, bronchitis and asthma frequently occur. The constant state of irritation of the bronchi, bronchioles and air vesicles of mouth-breathers is undoubtedly caused by the air being dry when it reaches these organs. Credit was due to Dr. Bosworth for having first demonstrated and

proven that the respiratory was the most important function of the nose; and also for having shown the purpose and function of the turbinate bodies in supplying this absolutely necessary moisture to the inspired air. We could not imagine a more favorable condition for the introduction, or more fertile medium for the culture and growth of germs, especially the bacillus tuberculosis. Many writers advance the theory that all tuberculous infection, even of the lungs, takes place through the tonsils or adenoid tissue (Lartigan). If the bacilli entered the blood vessels of the adenoid tissue, then undoubtedly, infection could readily occur; but if, as is most likely, they are taken up by the lymphatics, they are almost certain to be arrested in the cervical ganglia. He had no doubt that it was possible for meningeal infection to take place directly from the bacilli entering the adenoid tissue; but when the circuitous route these bacilli have to travel from the tonsils to the lungs is considered, and the fact remembered that the great majority of people dying from accident or other causes showed great numbers of bronchial glands infected with tubercle bacilli, it could not but be concluded that the infection had to take place by a more direct route—namely, through the air vesicle itself. Therefore we are led to conclude that, all conditions being equal, of two human beings—one with normal nasal respiration and the other a confirmed mouth-breather—the latter will prove to be the more susceptible to infection and show less resisting power in overcoming the resulting disease. As Dr. Miller had shown, there is probably some bactericidal power in the normal nasal secretion.

In conclusion, he most earnestly appealed to the general practitioner to give this matter the closer attention it deserved. However strong and well developed and rosy a growing child might appear, he did not deem him up to the standard if he breathed through the mouth, even though at night only. When we consider how simple a matter it is to diagnose these cases, when daily we saw children with poorly developed, ill-formed mouths, contracted nasal cavities, chronic purulent nasal discharge, impaired hearing, chronic suppurative middle ear catarrh, deaf-mutism, impairment of speech, flat and badly developed chest walls and muscles, dull and listless, lacking in attention and memory, with gaping mouth and almost idiotic expression; and know that these symptoms are

due to some obstruction to normal nasal respiration (usually post-nasal adenoids), and when we consider how simple a matter it is to remove these causes and to re-establish the normal nasal respiration, and to see what a transformation takes place—"the child is physically almost born again—it is strange that so much neglect is manifested. Dull intellect brightens, deaf ears are unstopped, phonation becomes clear and distinct, mouth-breathing disappears—in short, the child is a new creature." When we consider these points, then should the subject of mouth-breathing, with all of its far-reaching, damaging effects on the growing, developing child, receive the careful and thoughtful attention that the importance of the matter demanded. The air should enter the lungs by way of the nasal passages. Since his attention had been directed to the importance of the subject, he had observed that nearly every case of tuberculosis he had seen had been a mouth-breather from childhood.

Dr. J. P. Davidson said that if the operation for adenoids was deferred till after the first teeth were shed, there was no question but that the disfigurement of the mouth would be more or less permanent: if undertaken after the eighth to the tenth year, improvement would be less marked. Where the condition is not corrected, and there is not much adenoid growth, there is more or less hypertrophy and displacement of lymphoid by connective tissue, and this is responsible for more chronic throat trouble than the tonsils, and removal was much more difficult.

Dr. Miller, in closing, said that all efforts should be persisted in till the upper nasal passage is restored; the lower passage is not so important. He did not think that rhinologists had yet reached the limit of beneficent results to the thickened nasal membrane following removal of submerged tonsils. Idiots and the simple minded, all had the high arched palate, and are mouth-breathers. Whether or not there is any connection between the two he did not know.

Gude's Pepto-Mangan.—Iron preparations spring up like mushrooms in a night. The one backed by clinical evidence in hospital practice is the stand-by, Gude's Pepto-Mangan, which is the standard of known worth and which gives positive results.—*Medical News*.

SOME FACTS ABOUT A NEW HYPNOTIC— HEDONAL.

By I. JULIUS MARTINSON, M. D., New York, N. Y.

The number of pure hypnotics—i. e., remedies producing sleep which resembles the natural sleep, though very large, is receiving constant accessions. This shows that there is no remedy at our command which can be regarded as a specific acting in all cases, under all circumstances, and without any unfavorable by or after effects. Chloral, though very effective in many instances, must be used with extreme care on account of its depressing action upon the heart. Chloralamid is not a reliable hypnotic; the bromides are rather nerve-sedatives than hypnotics. Sulfonal and trional have been used extensively on account of their comparative safety, but while of great value in many instances, they sometimes produce undesirable sequelæ, or if employed for a long time must be alternated with other drugs.

Some fifteen years ago the well-known pharmacologist, Schmiedeberg, introduced urethane as an hypnotic, but it was abandoned on account of the very big doses in which it had to be given. The latest addition to the group of hypnotics is a derivative of urethane, and is called hedonal. It is a white crystalline powder, almost insoluble in cold water, but soluble in hot water and in alcohol, having a peppermint-like odor and a very peculiar taste. Dreser found, after many experiments, that it acts on animals in far smaller doses than urethane, chloral hydrate, trional or sulfonal; that it decomposes in the organism into carbonic acid, water and urea, has no undesirable effect upon respiration, circulation, temperature, and increases the secretion of urine.

As an hypnotic hedonal has been tested by many different authors. In the *Medical Examiner*, January, 1901, Dr. Fairchild published a review of the different reports on hedonal. Since that time new experiments have been made by a large number of German, French, Italian, American, and Russian authors. The majority of the investigators found that if employed in mild cases of insomnia in doses ranging from 1.0 to 3.0 gm., it produced in a short time a most refreshing sleep, lasting from five to seven hours: provided, the sleeplessness was not caused by pain, in which case the effect was either not at all present or very uncertain. This shows that hedonal has no sedative properties, but is an hypnotic pure and simple.

In regard to the increased secretions of urine, some authors observed no such effect, while others noticed an enuresis nocturna after its use, especially when it was given in solution.

It is of some interest to review briefly the publications on hedonal which have appeared after Dr. Fairchild's article.

Dr. L. Thaly (*Pester Medicinische Chirurg. Presse*, No. 41, 1901,) employed hedonal in doses of 1.0 and 2.0 gm. in cases of neurasthenia and various internal diseases. He obtained negative results only in two out of ten cases, and thinks that hedonal may be used with advantage in cases in which the sleeplessness is due to cough, as in tuberculosis of the lungs, pneumonia, etc.

Max Weiner (*Therapie der Gegenwart*, September, 1901,) found that in all his cases hedonal produced sound, refreshing sleep without any after effects.

E. Arndt (*Therap. Monatshefte*, April, 1901,) treated 300 cases of insane patients in the sanatorium at Hilburghausen with the remedy. The average dose of 2.0 gm. had to be increased to 3.0 gm., and occasionally to 6.0 gm. in cases associated with hallucinations, but he did not observe a single instance where such large doses, even given continuously for weeks, exhibited any undesirable after effects. The only failures reported were in a case of dementia senilis, and in another of circular mania, where all other hypnotics also failed.

Dr. Wedekind (*Städtisches Krankenhaus*, Berlin,) tested hedonal in 41 cases of nervous and other diseases, and obtained excellent results in 27. In 5 cases sleep did not last long, or its appearance was much delayed. In 9 cases it had no effect whatever, but here the sleeplessness was mostly due to pain. Pulse, respiration, temperature, and secretion of urine were not influenced in his cases.

Dr. A. Marberger (Budapest Polyclinic; *Pester Medic. Chirurg. Presse*, No. 52, 1901,) tried hedonal in 25 cases, and recommends it highly, especially in surgical cases the night before an operation, when the patients are generally sleepless from excitement, and after the operation. In insomnia due to pain, or where hedonal does not produce a sleep of sufficient length he combines it with trional and pyramidon.

Dr. Rosenthal (*Vratch.*, No. 27, 1901,) used hedonal in 19 cases of insanity and found it efficient when the excitement was not great.

Dr. Julius Bussanyi (*Magyar Orvosok Lap-*

ja, No. 10, 1902,) administered hedonal to 17 patients suffering mostly from diseases of the respiratory organs. In doses of 0.5 gm., three times daily, it diminished the cough and prevented asthmatic attacks, besides producing a refreshing sleep.

Prof. J. Fritsch (*Wiener Med. Presse*, No. 24, 1902,) experimented with hedonal in a large number of cases, chiefly in neurasthenia and mental depression, and almost always obtained good results from doses not higher than 1.0 gm. A paralytic who had not slept for months was relieved of his insomnia after taking the remedy only twice.

Dr. Scherf (*Wiener Med. Blätter*, No. 21, 1902,) employed it with good results in neurasthenia, melancholia, epilepsy, ataxia and erysipelas. Sometimes he combined it with very small doses of morphine and observed excellent results where morphine alone would have had to be given in very large doses.

Dr. S. Teledgi (*Pester Medic. Chir. Presse*, No. 8, 1901,) tried it in cases of malaria, melancholia, paranoia, and thinks that the sleep produced by hedonal resembles more closely the natural sleep than that produced by any of the other hypnotics.

Dr. Tendlau (Moabit Hospital, Berlin; *Fortschritte de Med.*, No. 5, 1902,) had good results with hedonal in sleeplessness from cardiac affections, nephritis, and skin diseases.

Professor Combemale and Dr. Crespin (*L'Echo Medical du Nord*, No. 29, 1901,) studied its action in 20 cases with very good results in 14. In the remaining 6 they could not find any superiority over other hypnotics, very probably because in these cases the sleeplessness was due to great pain.

Dr. Schonfeld (Inaugural Dissertation, 1901,) tested hedonal in 30 cases in Prof. von Ziemssen's clinic, and obtained good results even in those in which other hypnotics failed. No unpleasant sequelæ were noticed, and only in two cases was it necessary to increase the dose after administering the remedy for a little while.

In a large number of other publications on hedonal we note nearly the same results as in the experiments above mentioned.

I had occasion to use hedonal in the following cases:

Case I. Mrs. K., 40 years old, had been suffering from severe headaches, high fever, and constipation for a week before I saw her. There

was no roseola. The urine gave a distinct diazo reaction. Examination of the blood showed a marked Widal reaction (1:20). The diagnosis of typhoid fever was beyond doubt. One of the symptoms greatly complained of by the patient was insomnia, and as the customary hypnotics (chloral hydrate, opiates, etc.) could not be given on account of the weakness of the heart produced by the continuous high fever, which, for the same reason, was combatted only by cold water, and not by antipyretics, I resolved to try hedonal in this case. I administered it in dose of 15 grains, to be taken dry on the tongue, and followed by a draught of some liquid. As she could not take it in this way, it had to be given in an alcoholic solution flavored with oil of fennel. This dose produced a sleep lasting a little more than four hours, with very beneficial effects, as she had not slept for about ten days previously. The next evening she took 20 grains and slept about seven hours. Not noticing any unfavorable symptoms from the remedy, I used it almost every night during the course of the disease, altogether twelve times, in doses of 15 to 20 grains, never higher, and I am positive that the refreshing sleep induced by it strengthened the patient, and in this way contributed materially to her recovery. I watched her heart very carefully at the time, but could not detect the slightest untoward symptom attributable to its use.

Case II. M. M., 24 years old, a medical student, had been suffering from sleeplessness as a result of mental overwork for about half a year. He could not obtain more than two hours' sleep during the whole night. First, he tried warm foot and sitz baths before retiring, took a slight amount of nourishment a couple of times during the night, used electricity, but all in vain. At last he resorted to hypnotics, first using trional, which acted very well, but failed after a while. Then he took morphine, which did not afford him a natural, refreshing sleep. Upon my suggestion he tried hedonal. The first time he took 30 grains of it in the powder form, and fell asleep 30 minutes afterwards; he did not wake up for seven hours, and then felt perfectly refreshed, which had not occurred to him within half a year. The second night he took only 15 grains, which also gave him a good night's sleep of about the same duration as the first. He has been using hedonal now for almost a month; of course, not every night, as he is noticing that he can fall asleep now quite often without it. Less

than 15 grains have no effect on him at all, but this dose has been sufficient all the time. He does not feel the slightest bad effect from taking it, and has not noticed increased urination.

Case III. Mr. M. B., 40 years old, a merchant, with pronounced neurasthenic symptoms, could fall asleep as soon as he went to bed, but woke up regularly at about 3 A. M. In this case of so-called morning sleeplessness I first advised the patient to take 10 grains of hedonal at the time he awoke. He always fell asleep about 20 minutes after its administration, and slept from three to five hours without experiencing dizziness or headache, which he complained of after the use of other hypnotics.

Case IV. Mrs. Sch., 48 years old, had been suffering for some time from the effects of the menopause, among which was persistent sleeplessness, which resisted all hygienic measures. Bromides soon failed. Trional produced a peculiar itching all over the body. Chloral hydrate could not be given on account of chronic endocarditis. Hedonal in 15 grains doses had no effect at all; 20 grains produced a sleep lasting never more than two hours, sometimes less; 30 grains produced sleep for four hours. She was perfectly satisfied with the drug, as she always felt refreshed after its administration, and did not complain of headache produced by the other hypnotics. She has taken now about 350 grains of the drug. At first she did not like it on account of the taste, but she soon got used to it, and is taking it dry on the tongue, followed by milk. No bad effect upon the heart or other organs is noticeable.

Case V. Mrs. B. F., 56 years old, carcinoma ventriculi, falls asleep only when morphine is administered hypodermically; she cannot sleep even when pain is absent. As all drugs and most kinds of nourishment are rejected by the stomach, I tried hedonal in this case in the form of suppositories, but used, of course, a larger dose than I would have given per os—viz., 30 to 45 grains. Whenever the pain was very severe even 45 grains had no effect at all, but when it was absent, or not very severe, she slept from three to six hours uninterruptedly. I tried to combine hedonal with very small doses of morphine (1-16 grain), as advised by some authors, in order to avoid giving large doses of morphine alone, but I did not find any advantage in this method.

Case VI. Mr. B. S., 27 years old, erupous pneumonia, took hedonal for sleeplessness six

times during the course of the disease, which was marked by very high temperature and delirium. Three times it acted very well in doses of 20 grains; the other three times it had no effect at all.

In several cases of neurasthenia insomnia hedonal gave excellent results even in small doses of 10 to 15 grains. My experience with hedonal justifies me in presenting the following conclusions: It is a perfectly harmless hypnotic in all cases, even in those with profound circulatory disturbances, which cannot be said about any other hypnotic. It is indicated first of all in cases of neurasthenia, then in insomnia due to high fever and constitutional disturbances. Sometimes it may be employed with advantage in insomnia due to pain, if the latter is not very severe. The average dose is 15 grains, but even 45 grains or more can be given safely. The effective dose need never be increased. The drug does not seem to possess any cumulative effect. The best way to take it is in the powder form.

275 East Tenth Street.

OPERATION FOR CATARACT, WITH REPORT OF SIXTY-FIVE (65) CASES.*

By E. OLIVER BELT, M. D., Washington, D. C.

Surgeon to the Episcopal Eye, Ear and Throat Hospital, etc., etc.

Operations for cataract have been performed for at least a thousand years. Yet the nature of the trouble has only been known since 1692, when Maitre Jean convinced himself that a cataract was an opacity of the lens. Up to 1735, when extraction was first practiced by Daviel, the usual operation was that known as couching or depression, whereby the lens was displaced downward and backward into the vitreous, giving immediate vision and apparently brilliant results, but too often resulting in severe iridocyclitis, and final loss of vision in that eye, and frequent blindness in the other from sympathetic inflammation.

Mooren says that in two (2) years he saw twenty-one (21) eyes lost by this method, and of these six lost the other eye by sympathetic ophthalmia.

Discission of cataract was not extensively

*Read before the Medical Society of the District of Columbia February 4, 1903.

practiced until 1787. This operation was performed for senile as well as for soft cataracts up to within fifty (50) years of the present time, since which it has been practiced only for soft cataracts, or for ripening immature senile cataracts.

After extraction was introduced by Daviel various methods were practiced, that devised by Beer soon becoming the most popular. While Daviel made the corneal section with curved scissors, Beer used the well-known knife which bears his name, and made the section of the cornea inside of the limbus, and separated the lower half of the cornea from the sclera.

The capsule was then divided and the lens removed through the pupil without iridectomy. Many eyes were lost after this operation by suppuration of the cornea, and Van Græfe thinking this due to the large corneal flap, suggested what was known as simple linear extraction. As first practiced by him section was made in the upper part of the cornea with a lance knife and combined with iridectomy.

The corneal section, however, was found to be too small, making it difficult to express the lens, and he abandoned this method and introduced what he called the "modified linear extraction."

The section was made with a narrow bladed knife, which has taken Von Græfe's name, though its use was first advocated by Tenon.

The point of entry was through the sclera, where the vertical tangent of the cornea is at a distance of one to one and a half millimetres from its margin, and the exit at the opposite corresponding point, the centre of the section was just behind the limbus. While suppuration of the cornea became less frequent, iritis, iridocyclitis, and sympathetic disease of the other eye became more common from proximity to the ciliary region. So operators of the present day, with antiseptic methods, having little fear of suppuration, are making the section at the limbus or in the transparent cornea, making it upward with a flap embracing about two-fifths of the cornea. The Von Græfe knife is quite universally used. Many surgeons now operate without iridectomy, some only do the simple extraction in cases thought to be especially suitable, while others adhere to the combined operation, holding that there is much less risk of prolapsus of the iris and its attendant complications when a small portion of the iris is removed. Though the round mobile pupil is greatly to be desired, the risk of prolapse of the iris is un-

doubtedly much greater when an iridectomy is not done. The after treatment varies with different operators. Many use eserine after simple extraction, while others think it tends to produce iritis, and use only a solution of salt or boric acid for cleaning the conjunctival sac. Atropine is instilled after the second or third day, and seems to be universally used when an iridectomy is made. Some close both eyes with a roller bandage, others use a simple bandage, closing one or both eyes. Chisolm for years closed only one eye with a small strip of adhesive plaster, and had uniformly good results. One operator has published the results of one hundred extractions treated by the open method; of these six had prolapse of the iris, five loss of vitreous, one panophthalmitis and three inflammation resulting in loss of all useful vision—results too bad to encourage others to try the method.

In the following report I will give the last fifty consecutive cases of senile cataracts that I have operated upon at the Episcopal Eye, Ear and Throat Hospital, and 15 cases of soft cataracts operated upon during the same period. Their ages varied from 3 years to 90. Of the senile cataracts 12 were operated upon without iridectomy; all obtained good results, and there was no prolapse of iris in any, though there was extensive loss of vitreous in one of these cases, and they included the patient aged 90. Of the remaining cases operated upon with iridectomy all had good results except three. In the first of these the patient was 67 years of age; the operation was smooth, and everything seemed to be doing nicely until the third day, when there was chemosis of the conjunctiva. This was probably due to the patient's rubbing the eye, as she had no further trouble for ten days, when I found the corneal wound open and blood in the anterior chamber, the result of rubbing.

The second case was 76 years of age. She suffered with rheumatism. Iritis followed operation on both eyes, resulting in occluded pupils; later an iridectomy was made on one, and she obtained a good result. She would not remain to have an iridectomy on the other.

The third case was an old colored man from Haiti. Contrary to my usual custom, I operated upon this patient the day he was brought to the hospital, as his son was anxious for the operation to be done immediately. There was a little mucous secretion at the inner canthus, but it was not thought to be serious. The operation was smooth and perfectly satisfactory, but the

next day there was a muco-purulent conjunctivitis. This was followed by infection of the wound and loss of the eye. Some weeks later, after careful treatment of the conjunctivitis, which also affected the other eye, it was operated upon and a fine result obtained.

Several patients ruptured the corneal wound, one on the 4th, one on the 5th, and one on the 10th day after the operation. None resulted seriously, but healing was tardy. I now invariably cover the eye with a mask until I think all danger is over.

Of the 15 soft cataracts, 14 received good vision. One left the hospital against my wishes on the 3th day. There was no evidence of trouble on the 10th day, but on the 14th he returned with an irido-cyclitis and pus in the anterior chamber. This is the only case in which I have ever had serious trouble follow a simple needling, and it is difficult to account for inflammation beginning two weeks after the operation.

The lens was extracted in seven cases after needling had failed to cause absorption, the result being good in all.

To obtain a high percentage of successful results no operation requires more skill or more careful attention to details of aseptic surgery than operations for cataract. With these, results are brilliant; without them failure follows failure. Slight infection following other operations may mean only retarded healing, but after cataract operation it means loss of the eye. I insist upon the patient coming to the hospital the day preceding the operation. He becomes accustomed to his surroundings and is better prepared for the operation. A gentle cathartic is usually given, the eye are carefully irrigated with some mild antiseptic, and this is repeated the following morning and immediately preceding the operation. The instruments are sterilized by boiling or alcohol. A 10 per cent. cocaine solution is used before and after the corneal section is made, and a simple extraction is made unless there is some tendency to prolapse of the iris, in which case an iridectomy is made. The use of atropia begins the second or third day after simple extraction or immediately after extraction with iridectomy. Both eyes are closed with cotton pads and bandage held by tapes. The patient is put to bed in a room slightly darkened and kept absolutely quiet for 24 to 48 hours, during which time he is kept on a liquid diet. The eye is examined daily and gently irrigated

with boric acid solution. If all goes well the eye not operated upon may be opened the 4th or 5th day, and the patient may sit up. The other eye may be left open by the end of a week, and dark glasses worn. The room at first moderately dark, may be made lighter day by day, but all glaring lights should be excluded. By the 14th day the patient can usually leave the hospital, but should do no work for a month.

It would be better if glasses were not prescribed under 6 weeks or 2 months, as the cornea reaches a more stable condition in that time, and there will not be so much astigmatism. Less astigmatism would probably result if compress and bandages were not used, and the lid simply closed with adhesive strips and the eyes protected with a mask of wire or transparent celluloid.

The Farragut, 17th and I Sts., N. W.

Analyses, Selections, Etc.

Action and Therapy of Organic Extracts, etc.

Dr. O. T. Osborne, Professor of Materia Medica and Therapeutics at Yale, read a paper (*Yale Med. Jour.*, April, 1903,) before the Medical Association of the Greater City of New York, December 8, 1902, which well reviews the subject. He suggests that derangement of the function of the glands which furnish internal secretion may be the cause of many of the diseases or disorders of nutrition. We are in the realm of surmise as to the real physiology of the ductless glands in disturbed conditions, and are therefore often justified in the empiric use of the various organic extracts or internal secretions. The juices of only the most important ductless glands are considered in this paper.

Conditions proven to be caused by disturbances of one or the other of the internal secretions are: (1) *Acromegaly*; (2) *Cretinism*; (3) *Myxedema*; (4) *Addison's disease*, and (5) about a half of the cases of *Diabetes*.

The *thyroid gland* is the main organ to furnish *vaso-dilating* material; while the *supra-renal glands* are the main organs to furnish *vaso-contracting stuff*. Hypersecretion of the thyroid or the feeding of thyroid substance always dilates the peripheral blood vessels and reduces arterial tension; whereas the blood pres-

sure raising power of suprarenal extract is without equal in pharmacology.

A brain centre for heat regulation has never been proved; but many believe that the vaso-motor centre in the medulla explains this normal regulation of heat production and heat loss. We do not know what part these two glands play in alternately opening and shutting the blood vessels, but we do know that the babe has only an imperfectly developed thyroid; and the adrenals contain no vaso-contracting stuff, while the temperature in the very young varies with the temperature of the surroundings—it having no heat governor or regulator.

The thyroid gland seems to be the one that has most to do with the skin, keeping it soft and pliable, and causing normal amount of insensible perspiration. If this gland atrophies, or enlarges by connective tissue elements, displacing its normal parenchyma, the skin becomes harsh and dry; and if the condition becomes sufficiently aggravated, mucin appears in the tissues, and the condition of mucous edema or *myxedema* develops.

Normally, the thyroid gland atrophies after 45 or 50 years of age, when the skin becomes dry, harsh, rough and perhaps shrivels or wrinkles. In this condition of the skin of old age, when scaly eczemas, due to cutaneous dryness, develop, the use of thyroid is one of the best treatments.

Diminished thyroid secretion causes higher blood tension, and tends to allow an endarteritis, which may lead to true atheroma. Hence the normal stiffening of the arteries as age comes on is simply physiological, due to the under secretion of the thyroid, and if not actually to the over-secretion of the suprarenals, at least to the over-relative secretion of the vaso-contracting stuff. From these two reasons, the arteries harden, and blood tension becomes high. Some of these conditions occur because these glands under-secrete or over-secrete, due to various causes. Hence the so-called "alterative drugs" have such "alterative action" because they act upon one or more of the ductless glands, modifying their secretion.

Perhaps syphilitics have so much tendency to sclerosis and endarteritis because mercury long given may interfere with thyroid gland action. Probably under-action of the thyroid also allows connective tissue growth in many of the organs; in other words, it allows sclerosis. Hence the feeding of thyroid in small doses is one of our

best treatments to prevent the advance, or, at least, to slow up this connective tissue formation. Thyroid is also of marked benefit in arterio-sclerosis, where nitro-glycerin in small doses reduces the disturbances from high tension, such as dizziness, sleeplessness, headache, and possibly asthma. Iodids, so much used to meet these conditions, are stimulant to thyroid secretions.

In the opposite condition—*shock*—whether due to pain or to injury or to operations even without the loss of blood, we have from each cause the same pathology—namely, very low blood pressure and dilated or even paralyzed vessels. In the mean time, of course, the body is losing the heat, so necessary to life, from the dilated peripheral vessels. Whether severe pain has caused an enormous secretion of the thyroid, or, more probably, temporarily paralyzed the adrenals, we do not know. When such shock follows laparotomy, whether from splanchnic plexus injury, or from the necessary manipulations, disturbing the adrenal glands, the most prominent indication is for something that will contract the blood vessels, and often no drug is capable of carrying on the fight to a successful termination. To meet this condition, we have in supra-renal, or adrenalin chloride, or supra-renal solutions, the very agents we desire. *Suprarenalin* is Armour's selling name for *Abel's epinephrin*. This substance raises the blood pressure immediately, but unfortunately does not last but a part of a minute.

In treating shock, inject a solution of supra-renal (1 part to 1-1000th supra-renal, so that each drop represents .00005 of a gram), drop by drop, into a vein, timing the rapidity by the pulse behavior. Adrenalin chloride solution is active, but is acid. Any of these supra-renal preparations can be given on the tongue; but, unfortunately, when taken into the stomach, the blood pressure raising power of supra-renal is absolutely lost.

Supra-renal is a strong cardiac stimulant as also a vaso-motor contractor. In profound morphine narcosis, the adrenal secretion is stopped, which explains some symptoms of the last stage of opium poisoning, and shows the danger from loss of heat in these cases, and suggests supra-renal treatment.

The thyroid secretion is a marked cerebral stimulant, causing wakefulness, acuteness, rapidity of thought, and general brain activity—all of which generally occur in neurotic pa-

tients. If this secretion is greatly exaggerated, we have headache, brain irritability, and can even feed it to the point of causing convulsions. We do not know the brain conditions in melancholia, but thyroid occasionally awakens the mental faculties in such morbid conditions.

In vaso-motor ataxia (Cohen's term) of neurasthenia, the suprarenal glands are probably not doing their work, which would give low blood pressure, lack of digestive power, drowsiness due to brain anemia when patient is up, and sleeplessness when he is lying down.

As to the intangible cause of *hysteria*, the thyroid gland, in women, normally hypersecretes with each menstrual period. Also 80 per cent. of all cases of exophthalmic goitre (or Graves' thyroid diseases) occur in women between 20 and 40 years of age—in other words, during the most active period of thyroid life in women. And as the symptoms are exactly those caused by overfeeding of thyroid—namely, nervousness, restlessness, sleeplessness, palpitation, hot flashes, sweating, and increased irritability of reflexes—*hysteria* is probably due to *hypersecretion* of the thyroid.

On the other hand, 80 per cent. of myxedema cases occur in women—well known to be due to *under-secretion* of the thyroid—and occurs almost invariably from 45 to 55 years of age, when the thyroid normally begins to atrophy.

Between these opposite points of profound hypersecretion and of practical absence of thyroid secretion are all grades of increased or diminished secretion, and many of the troublesome, intangible, unaccountable symptoms in women are due to this variation in thyroid secretion.

If the thyroid, which has been hypersecreting once a month, stops its work synchronously with the ovaries at menopause, we have health. But if this gland continues to secrete more than is needed by the organism, then the troubles due to the menopause occur, such as hot flashes, full-headedness, palpitations, and other nervous phenomena. As a corollary, in delayed menstruation, with or without anemia, no drug is as efficient in causing normal menstruation as thyroid extract in 3 grain doses 3 times daily. In fact, menorrhagia often follows in feeding thyroid for other purposes.

A diminished amount of normal thyroid secretion in the young child make the fat, flabby skin, dull features, chronic eczemas, erosions and fissures, and perhaps enlarged glands of the

neck. Often such cases do better on thyroid than on any other treatment; and the very alteratives which we find valuable are those which increase thyroid secretion—namely, arsenic, iodide of iron, the iodine of cod liver oil and potassium iodide.

The *thyroid gland* regulates the elimination of nitrogen in the urine; and we can feed patients, obese or not, on thyroid and increase the nitrogenous output. But when the thyroid begins normally to diminish its secretion—especially in women after the menopause—people increase in weight—called “old people's fat.”

Diseased *suprarenals* cause many symptoms of Addison's disease—notably, great diminution of vaso-motor tension; and the victim of this disease apparently dies of what might be called an ultimate vaso-motor paralysis.

Suprarenal gland function has something to do also with the production of glycogen. There are cases of diabetes mellitus without any pancreatic or nervous disease. In such a case under the author's care, under the action of suprarenal substance by the mouth, the output of glucose was diminished, diacetic acid disappeared, and the acetone and the ammonia were greatly diminished, as shown by the weekly examinations of the urine. This boy went along very well on suprarenal feeding for nearly a year, when, for observation purposes, the suprarenal was stopped for two weeks. But, *post hoc* or *propter hoc*, the patient at the end of that time developed diabetic coma, and died in a few days. In this same case, early in the disease, thyroid feeding almost caused toxic acidemia. It is interesting to note that hyperthyroid feeding and Graves' thyroid disease can cause glycosuria.

The suprarenals perhaps have a causative something to do with gout. For with gouty joints, high tension blood vessels, and in gouty asthmatic attacks, small doses of the opposite of suprarenal—viz., *thyroid*, not only gives considerable immediate benefit, but tends to lessen the frequency of all kinds of gouty attacks. This may be due partially to the action of thyroid on nitrogen elimination.

The *pituitary secretion* is probably in excess of normal in *giantism*. The pituitary gland is always diseased in acromegaly; and probably if every case of giantism lives long enough, he will assume the acromegalic type—*giantism* being merely homogenous overgrowth of bone, while *acromegaly* is irregular bone growth. Possibly

in the beginning of acromegaly there is always hypersecretion of thyroid. If this occurs late in life, the enlargement is of the ends of bones and the extremities, although a few of the long bones grow. Certain it is that in acromegaly there is positive formation of new bone, as well as an increase of the size of old bone, and this is normal hypertrophy. When this pituitary secretion becomes disturbed, we have in acromegalic cases, almost continuous headache—sometimes excruciating in character. In several such cases, these headaches were made better by feeding pituitary. A corollary of this increased bone growth might be to feed young dwarfs on pituitary substance.

The glands of the body seem to be more or less interchangeable in their functions; so that if one is unable to do its work, another seems to take up extra work. This is true of the thyroid gland in acromegaly; and some of the early symptoms of this disease are due to too much action of the thyroid. Later in this disease the thyroid secretion is diminished. In probably all authentic, complete autopsies of acromegaly the thyroid is found atrophied—at least as to its parenchymatous portion—and many of the typical signs of acromegaly are due to this pseudomyxedema. Pituitary substance slightly stimulates the heart and contracts the blood vessels, but is greatly inferior to suprarenal in this respect.

The *thymus gland* atrophies in childhood and disappears after puberty; hence probably performs some important function in the development and growth of the young child. If it performs any other function, some other gland or glands evidently assume such work after the age of puberty.

The thymus gland contains the largest amount of nuclein, and hence of phosphorus, of any gland of the body, and will serve the purpose of any nuclein treatment. An extract of this gland is probably a constructor, and hence reconstructive, and cannot cause debility, and does nothing but good. Inductively, this gland, so active during the period of greatest bone growth, must have something to do with the formation of bone salts. As these earthly salts are all necessary to permanently encapsulate or to heal tuberculous lung lesions, theoretically thymus should be of value, and in tubercular cases it aids whatever hygienic or medicinal treatment is instituted. In other words, these patients very generally gain under thymus.

Many cases of *exophthalmic goitre* improve under the use of this glandular substance, but no treatment positively stops hypersecreting glands except morphine or codeia.

The thymus gland has been found absent in hemophilia, and thymus extract has shown some coagulant action on blood. Hence in hemophilia thymus gland should be tried.

This gland would seem theoretically of value in rickets. Objective cases of rickets in this age of good feeding are so infrequent that I have had no opportunity to give this treatment a proper test.

In the scurvy of children undoubtedly the blood is not getting what it needs; perhaps it is the thymus gland that cannot get the salts required, and this causes the bleeding and other symptoms of that condition.

We are so much at sea in regard to the physiology of the internal secretions of the pancreas, spleen, testicles, ovaries, mammary glands and parotid, that we can draw no safe therapeutic indications for their use. Whatever is done in a therapeutic way with these extracts is purely empirical, and mostly, as yet, experimental. Of course, any gland like the testicle that contains nuclein, and hence phosphorus, will give tonic phosphorus to the system.

Turning to the blood, it would seem that chlorosis is due to bad chemistry somewhere, probably in the gastro-intestinal canal, but perhaps some gland is not doing its work. At any rate, though these cases will all get well on either organic or inorganic iron—often best the latter—some of them will get well on some saline.

In the study of a case of *lymphatic leucemia*, some interesting physiological facts have been demonstrated. This man, sixty-four years of age, has all of the glands of his body enlarged, internal and external, as well as a large liver and a fairly large spleen. Under careful observation for a year and a half, his white corpuscles remain anywhere from 170,000 to as high as 380,000 per cubic millimeter. Over 93 per cent. of these white cells are lymphocytes, only a little over 1 per cent. being polymorphonuclear, while normally about 75 per cent. of whites should be the polymorph variety. In the laboratory, these white cells did not break down. If they did, we should have a greatly increased uric acid and phosphorus output. This man's uric acid and phosphorus output were perfectly normal on repeated examinations—i. e., normal

for a man with 8,000 white cells. The only treatment that markedly increased this uric acid output was an alkali—viz., bicarbonate of soda. Nucleic acid also somewhat increased it. If uric acid is mainly due to nuclear breakdown, this is pretty positive proof that these white cells do not rapidly disintegrate. On the other hand, while this bicarbonate of soda was being fed for one week his white blood count went from 203,900 to 380,000, while at the same time he lost red blood corpuscles.

Another interesting point: Any treatment that greatly reduced the size of his gland always made his white blood count greater and his red blood count less. This was true of the bicarbonate of soda, and very true of arsenic. Hence arsenic was in his case, at least, vicious treatment, although the glands grew smaller under it.

Nucleic acid was fed him, on the theory that as it always causes leucocytosis—i. e., an increased number of the polymorphonuclear cells—if the lymphocytes were the origin of these cells, we ought to cause a great number of them to be formed. Nucleic acid did not cause any increased number of polymorphonuclear cells. If fed in large amount it did cause a diminished white blood count, but also diminished the red blood count.

One pernicious malarial chill reduced his white blood count from 238,000 to 68,000. The next day they went up to 170,000, and on the next chill, which we were unable to stop with enormous doses of quinine, the whites came down to 120,000. From that time on, the chills being stopped, the whites went up to their usual number.

His red blood count ranging between 3,000,000 and 4,000,000 always improved under red bone marrow and as regularly diminished under any other treatment.

Since the first of last July this man's blood has been counted every week. He has been having red bone marrow almost continually during this period, and his red blood count has averaged about 4,000,000. On October 12th, he had been without this bone marrow for five days and his red blood count became 2,510,000, while a week before it was 4,200,000, a loss of 1,600,000 red blood corpuscles in five days without bone marrow. In six days more on bone marrow he had regained 600,000 of these corpuscles.

In this case, then, there is undoubtedly dis-

ease of the red bone marrow; also it is pretty good physiological proof that the red bone marrow produces red blood corpuscles, and also good proof that the feeding of red bone marrow supplies that deficiency.

Physiologists are about equally divided as to whether the lymphocytes are the origin of the polymorphonuclear leucocytes, or whether the polymorphonuclear leucocytes grow from the bone marrow. This case having practically no corpuscles of this variety, and his red bone marrow showing such evidence of it, would seem pretty good physiological proof that these polymorphonuclear leucocytes are formed in the red bone marrow.

Rabies in Michigan.

During the meeting of the Michigan State Board of Health, April 10, 1903, Dr. Victor C. Vaughan, of Ann Arbor, made a special report on rabies, now epidemic in that State. Two or three years ago, the disease was very prevalent in New York, it gradually spread partly through Ohio, and then into Michigan. The first case that came under his observation was near Ypsilanti, where a man died of the disease. From that time rabies has spread to every part of the lower peninsula of Michigan, and is now very prevalent among cattle, hogs, and other domestic animals. Many dogs and children have been bitten, and one child died of the disease at Saginaw. At the recent meeting of the Board of Regents of the University, Dr. Vaughan recommended that a Pasteur Institute be re-established at the University, which was done. There are already six patients being treated there, five of whom were bitten by dogs known to be infected with rabies. It takes three weeks to treat patients. Residents of Michigan are treated free of charge, but their room and board are not supplied by the University free. The Doctor thinks the \$2,500 which the University appropriated to maintain the institute for a year is money well invested. The loss in Michigan from cattle alone has already been several thousand dollars. The laboratory has been applied to for virus with which to treat animals as well as persons.

The secretary, H. B. Baker, mentioned that the child in Kalamazoo county, bitten by a rabid dog and sent to the Pasteur Institute at Chicago, is reported as still free from the disease.

Book Notices.

Membranous Catarrh of the Intestines. (*Colica Mucosa*.) By PROF. DR. CARL VON NOORDEN, Physician-in-Chief to the City Hospital, Frankfurt on Main, With the Collaboration of DR. CARL DAPPER. New York: E. B. Treat & Co. 1903. Cloth. Small 8vo. Pp. 64. Price, 50 cents.

This is Part III of "Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition," which are being published almost simultaneously in Berlin and America—the American edition being an authorized translation under the direction of Broadman Reed, M. D., Physician to the Samaritan Hospital, etc., Philadelphia. It is a useful contribution to the subject, especially to the dietetic aspect. Typical colic mucosa is defined causatively as occurring almost exclusively in subjects who have long been constipated. But chronic constipation alone never produces the disease. There must be, *in addition*, excessive irritability and over activity of the glands of the large intestines that produce the mucus. This glandular over activity is due to nervous influences, and not to anatomical changes in the mucosa. The disease occurs almost exclusively in the neurasthenic or in one having an hysterical predisposition. The *Treatise* is for the most part based on original work.

Obstetrics. By J. WHITRIDGE WILLIAMS, M. D., Professor of Obstetrics, Johns Hopkins University, etc. With 8 Colored Plates and 630 Illustrations in the Text. New York and London: D. Appleton & Co. 1903. Large 8vo. Pp. 845. Cloth.

This is a new "text-book" designed "for the use of students and practitioners," by an author whose scientific knowledge and practical experience are attested by the positions he holds. It is a book that grows in value upon the practitioner as he the more closely and critically examines its pages—text and illustrations; and when he has finished reading it, he will feel that "that's the book for me" when authority is sought or plain practical advice is wanted in the hour of want. For the college student, the volume is not so large as at first sight it appears, for about 60 pages of the nearly 800 pages of text are given up to bibliography, with which he need have nothing to do. It is an up-to-date work, and while the run of personal experiences may, in some particulars, be somewhat different from those of the author, there is really nothing

to criticize, nor any practices recommended that need revision. It is a fine work in every particular, suited to wants of the professor, the student and the practitioner. The illustrations, for the most part, are drawn from actual dissections or cases in practice. It is not surgically top heavy.

Editorial.

No Doctor a Director of the Virginia State Hospitals.

Under the new law, each of the four State hospitals for the insane, etc., of Virginia, is to be under the control of a special board of three directors. These twelve directors—appointed by the Governor of Virginia—form the general board of directors, which general board is to meet annually or oftener, as may be required. Col. Joseph Lane, the State Hospital Commissioner—also appointed by the Governor—is ex-officio president of the general board. The purpose of this general board is to map out plans for the management of the several hospitals, to elect superintendents of the same for terms of four years each, and to consider other matters of importance touching the management of these institutions. The subordinate officers and employees of the State hospitals will be appointed by the special boards of the respective institutions.

The special boards referred to are composed of the following: For the *Eastern State Hospital*, at Williamsburg, Messrs. E. H. Clowes, of Richmond city, H. D. Cole, of Williamsburg, and J. F. Garnett, of Mathews county; for the *Western State Hospital*, at Staunton, Messrs. S. H. Hansbrough, of Winchester, R. S. Funk, of Staunton, and James L. Treadway, of Pittsylvania county; for the *Southwestern State Hospital*, at Marion, Messrs. John G. Osborne, of Radford, C. C. Taliaferro, of Roanoke city, and Haynes L. Morgan, of Smyth county; for the *Central State Hospital*, at Petersburg, Messrs. R. B. Crooke, of Norfolk city, Julius Straus, of Richmond city, and Robert Gilliam, of Petersburg.

The first meeting of the combined boards, or general board of directors, met for organization, etc., at Hotel Jefferson, Richmond, Va., April 15, 1903.

If laymen only had to be appointed as composing these special boards of directors, we have no criticism of the relative fitness of each of the thirteen composing the commissioner and general board of directors of these respective State hospitals. But the remarkable fact is that not a practicing physician is on this board, which has to judge of medical matters as they may arise in connection with the management of these peculiarly medical institutions of the State. This we regard as the more pointed "cut" of the medical profession of Virginia by Governor Montague, whose special attention was recently officially called to the fact that "the medical profession is unrepresented, as it should be, on the boards of the various public institutions and colleges of the State," etc. During the session of the Medical Society of Virginia, 1902, representing the regular profession of the entire State, the following resolution (see page 256, *Transactions Medical Society of Virginia*, September, 1902,) the following resolution was unanimously adopted, and duly sent to the Governor of Virginia; his response is also appended:

"*Resolved*. That the attention of the Governor of this State be called to the fact that the medical profession is unrepresented, as it should be, on the boards of the various public institutions and colleges of the State, in order that the health of the inmates or attendants, and hygienic conditions of such institutions may be aided by intelligent advice."

Under instructions from the Society, the Recording Secretary forwarded this resolution to the Hon. A. J. Montague, Governor of Virginia, under the seal of the Society, last October, and received the following response:

"Commonwealth of Virginia, Governor's Office.
Richmond, Va., October 20, 1902.

"*Dr Landon B. Edwards, Secretary Medical Society of Virginia, Richmond, Va.:*

"Dear Sir,—I beg to acknowledge receipt of your letter of the 18th instant, enclosing me a copy of a resolution of your Medical Society, requesting that more recognition be extended to your Society upon the boards of the various public institutions and colleges of the State.

"In reply, I desire to say that your resolution will have my careful consideration; and I assure you that the selections heretofore made, and hereafter to be made, have not, and will not,

be prompted in the remotest by any discrimination against your honorable profession.

"Very respectfully,

"A. J. MONTAGUE."

In view of the facts above narrated, who can conceive of the motive of the Chief Executive of Virginia in thus not appointing a single representative doctor of the State on any of the four special boards—on some of which common reason would suggest that the ablest of available professional talent should have received recognition? In the name of the "honorable profession" of Virginia, we protest against such official discrimination.

North Carolina Medical Practice Law Being Tested.

About two weeks ago a man named A. C. Biggs was arrested in Greensboro, N. C., by Dr. Batten, a member of the North Carolina State Board of Medical Examiners, for practicing as a physician in that State without having obtained certificate after examination before the Board of Medical Examiners. Biggs advertised in and about Greensboro as "a non-medical physician"—using massage and physical culture treatment exclusively. He had secured by his advertising methods in two weeks a number of patients, and at the trial before the Mayor of Greensboro on April 9th, it was established that he was giving treatment for a fee. The prosecution claims that under the amended act of the last North Carolina Legislature any one, "except Christian scientists," who uses any method whatsoever for the treatment of disease, if a fee is charged, must first undergo an examination before the Medical Examining Board, and register the certificate before the clerk of the court. The act declares all such to be practitioners of medicine and surgery, whether medicine or surgical instruments are used or not. Biggs' lawyer takes the position that the amendment is unconstitutional, and the case, therefore, goes over to the Superior Court. In the mean time Biggs, under bond, continues his practice. Able counsel has been engaged for the prosecution, and it is understood that whichever way the Superior Court may decide, the case will go to the Supreme Court. If the case is finally decided against Biggs, it will mean the complete destruction of all species of massage, osteopathic or non-drug or non-surgical treatment in North Carolina except Christian

science, and it is estimated that at least a hundred irregular practitioners in that State will either have to leave or give their treatment free of charge.

While we cannot understand why an exception was made in the law in favor of so-called "Christian scientists," who, for the most part, are misguided "cranks" of a dangerous class, or arrant quacks and charlatans, still we congratulate the profession of North Carolina, who, through Dr. Batten, is taking the proper step to stamp out the growing class of cunning imposters and violators of the spirit and intent of the law—whatever technical evasions may be attempted.

The Kellam Cancer Hospital, Richmond, Va.,

Is in the courts of this city for a sort of "breath of promise" case. It seems that under a form of contract adopted by this institution, a patient deposited \$300, with the understanding that if the cancer was not cured, or if she died from the disease while under treatment at the hospital, the money was to be returned to her heirs. She died of cancer, her body was removed to the office of a "funeral director" of this city, where her body was examined by several practitioners, and judging from the post-mortem condition and the history of the case, the cancer killed her. And yet the special deposit is retained and not refunded. It is pitiable to see the number of ordinarily incurable cancer cases who, grabbing at a straw of promise, respond to the advertisements of such institutions, where contracts are so framed that if the patient leaves or is persuaded to leave the hospital in an uncured and dying condition, forfeits of the deposits are made, and these defendants of the poor, misguided victims are defrauded of their rightful possessions. And yet, by some intrigue or persuasion, the Kellam Hospital is exempted from the provisions of the medical practice act of Virginia. How legislators can be made parties to such glaring wrongs is a puzzling question.

Southern Winter Resorts.

Thousands of dwellers in the frigid North every fall and winter run away from the influenzas, the bronchitis, pneumonia, etc., of that section to the Southern States, and even to the tropics. But many of such climatic seekers are annually confronted by the fact of the inade-

quate hotel and suitable boarding house accommodations, and provisions for their entertainment or pleasure, unless such visitors have "bushels of money." The prevalence of mosquitoes makes it not at all certain that an ideal way of spending the winter has been reached by those who go to the tropics. According to general experience, the climatic conditions are better in the section north of the tropical region, especially in Georgia, Florida, etc., where the weather is temperate and not torrid, and where vegetation is midway between the Northern and tropical. Such facts suggest a point of interest to capitalists to establish more winter health and pleasure resorts in properly selected places in the belt referred to, and provide suitable sanitarium comforts, with attractive and inviting surroundings, where it will not require a mint of wealth to spend the season. The *Post-Graduate* for April points out the danger of the too early return of visitors from the Southern climates.

Alabama Medical Practice Law.

For many years, Alabama has taken the lead of all the States in the perfection of its medical practice laws—securing legislative amendments with apparent ease whenever such seemed needful to cope with the possible evasions of the law. The recently amended law enacts that "any applicant for a certificate of qualifications to treat the diseases of human beings by any system of treatment whatsoever, shall, according to rules prescribed and standards established by the Medical Association of the State of Alabama, be examined by one of the authorized boards of medical examiners of this State, in the following branches of medical learning—to-wit.: Chemistry, anatomy, physiology, the etiology, pathology, symptomatology and diagnosis of diseases, obstetrics and obstetrical operations, gynecology, minor and major surgery, physical diagnosis, hygiene and medical jurisprudence, and should said applicant be found proficient in said branches of medical learning, a certificate of qualification in such form as shall be prescribed by the said Medical Association of the State of Alabama shall be issued to him, which shall entitle him to treat any and all diseases of human beings in this State in any manner that he may deem best." "It is further enacted, that when any applicant states in writing that he has neither studied nor proposes to practice major surgery, said applicant shall be exempt

from examination in said branch of major surgery; and should he be found proficient in other branches of medical learning named in section one of this act, a certificate of qualification in form to be likewise prescribed by the Medical Association of the State of Alabama shall be issued to him, which shall entitle him to treat all diseases of human beings in this State in such manner as he may deem best, except by the practice of major surgery."

Does not this law meet every requirement of the case? Let legislative committees improve upon it, if they can.

The American Medical Association.

The 54th annual session, to be held at New Orleans, La., May 5th-8th, promises to be one of exceptional interest—scientifically, socially, and in medical legislative sense. Over 24 pages of the *Journal* of the Association of April 11th are devoted to announcements, etc., concerning it, and fine illustrations show places of interest in and about New Orleans.

We are interested, first, as to how to get to New Orleans for this occasion. Nearly all the railroads and water routes have made special reductions. From Washington, D. C., Richmond, Va., Lynchburg, Va., etc., and all points along the line of the Southern Railway, in conjunction with the West Point route from Atlanta and the Louisville and Nashville, from Montgomery to New Orleans; there will be no change, and this route is the most direct, the swiftest, the best appointed, the most picturesque way to go from the sections named. Through Pullman's are provided for each of the two daily through trains. The round trip ticket from Washington costs \$27.50; from Richmond, \$26.50, Pullman berth and car service to New Orleans from Richmond, \$6.50, but two can occupy one berth, and the same rate returning.

When you get to New Orleans, the question as to where you will stop is important. It is announced that the *hotels* cannot accommodate all Association members and their families, so that outside quarters must be greatly depended on. There are 11 or 12 hotels, which have announced rates on the European plan at from \$1 to \$2.50 a day and up, according to rooms, etc. Many boarding houses, however, all over the city, will be available, but most of these will only have rooms without meals. For further information on this subject, write, with self-addressed stamp-

ed envelope for reply, to Dr. E. D. Martin, care Crescent Information Bureau, No. 810 Common street, New Orleans, La., specifying your wants specifically if meals and baths are desired with rooms. The advice is given, with reference to boarding houses, that it is far better to arrange for bed and breakfast, and to lunch at the Artillery Hall, where lunch will be daily provided. Dinner at the famous restaurants of New Orleans should, by all means, be considered. The average rates at boarding houses will be \$1 to \$2 per day for rooms only.

The Parcel Delivery and Express Co. will have messengers on special, but not on regular trains entering New Orleans. So that those who arrive on the regular trains may keep their checks, if they wish, until their arrival at the Bureau of Information, Washington Artillery Hall, and have their baggage transfer orders made from that point. This company will charge 25 cents for each piece delivered anywhere in the city, whereas the charge of other principal companies of the city is 50 to 75 cents per piece.

Members of the House of Delegates are requested to meet at 2 P. M., Monday, May 4th, to unofficially consider the business which must be transacted by the House of Delegates. This informal meeting will so fully acquaint the Delegates of the work to be done that one meeting each morning will be sufficient to accomplish all the business of the Association—thus freeing the Delegates to attend the afternoon scientific work of the sections.

Socially, there will be a reception at the Palm Garden of St. Charles Hotel *Tuesday evening*, from 5 to 7. Ladies of the city will assist in receiving. On *Wednesday*, two large private receptions will be given—one an afternoon tea, and one at night. On *Thursday*, there will be grand fete champetre at the City Park, with music and refreshments. On *Friday*, there will be a boat ride on the river, at which about 2,000 people will be entertained, ending at 6 P. M., which conclude the social features of the Convention. Mrs. Samuel Delgado is chairman of the ladies' committee, which will undertake the general charge of the visiting ladies.

Dr. Wm. F. Creasy

Has been appointed by Governor Montague quarantine officer at Newport News, Va., to succeed Dr. Samuel W. Hobson, whose term of office expires May 1, 1903. Dr. Hobson was ap-

pointed by Governor Tyler early in his administration, and has made a fine officer. Dr. Creasy is also a regular practitioner of Newport News, and a Fellow of the Medical Society of Virginia. This position, from a financial point of view, is one of the most desirable in the gift of the Executive, being worth, it is said, not less than \$5,000 a year.

Leonard Medical College, Raleigh, N. C.

This one of the few medical colleges of the country devoted exclusively to the medical education of the colored race, at its commencement, April 9th, awarded twelve diplomas of graduation in medicine and five of graduate in pharmacy.

The Alexandria (Va.) Medical Society

Is an active local society, in affiliation with the Medical Society of Virginia, and is doing good work. Dr. Hugh McGuire is secretary.

Health Reports.

The following cases of *Small-pox* were reported during the weeks ending March 28th and April 4th, 1903, to the Surgeon-General U. S. Public Health and Marine Hospital Service:

Alabama—Mobile, March 14th-28th, 5 cases.
 California—Berkeley, March 4th-11th, 1 case; Los Angeles, March 4th-21st, 6 cases; San Francisco, March 8th-22d, 14 cases.
 Colorado—Denver, March 7th-14th, 22 cases.
 Delaware—Wilmington, March 14th-21st, 1 death.
 District of Columbia—Washington, March 21st-28th, 2 cases.
 Florida—Jacksonville, March 14th-28th, 5 cases.
 Illinois—Alton, March 14th-21st, 1 case; Chicago, March 14th-28th, 30 cases.
 Indiana—Indianapolis, March 7th-28th, 46 cases, 8 deaths.
 Iowa—Davenport, March 14th-28th, 8 cases; Dubuque, March 14th-21st, 1 case.
 Kansas—Wichita, March 14th-28th, 4 cases.
 Kentucky—Lexington, March 21st-28th, 2 cases; Newport, March 14th-21st, 1 case.
 Louisiana—New Orleans, March 14th-28th, 7 cases.
 Maryland—Baltimore, March 14th-28th, 4 cases.
 Massachusetts—Boston, March 21st-28th, 2 cases; Fall River, March 21st-28th, 3 cases; Lowell, March 21st-28th, 2 cases.
 Michigan—Detroit, March 21st-28th, 19 cases; Grand Rapids, March 21st-28th, 4 cases, 1 death; Port Huron, March 21st-28th, 3 cases.
 Minnesota—Minneapolis, January 3d to March 28th, 92 cases, 3 deaths.
 Missouri—Kansas City, March 14th-29th, 4 cases, 1 death; St. Louis, March 22d-29th, 6 cases.
 New Hampshire—Manchester, March 21st-28th, 10 cases; Nashua, March 21st-28th, 2 cases.
 New Jersey—Camden, March 14th-21st, 2 cases; Jersey City, March 21st-28th, 5 cases; Newark, March 21st-28th, 2 cases, 1 death.
 New York—Buffalo, March 21st-28th, 3 cases; New York, March 14th-28th, 2 cases.

Ohio—Cincinnati, March 13th-27th, 46 cases; Cleveland, March 14th-28th, 2 cases; Dayton, March 21st-28th, 5 cases, 1 death; Hamilton, March 14th-21st, 1 case; Toledo, February 14th to March 21st, 52 cases.
 Pennsylvania—Altoona, March 21st-28th, 4 cases; Butler, March 14th-28th, 2 cases, 1 death; Dunmore, March 1st-31st, 3 cases; Erie, March 14th-21st, 2 cases; Johnstown, March 14th-28th, 10 cases, 1 death; McKeesport, March 14th-28th, 3 cases; Norristown, March 21st-28th, 1 case; Philadelphia, March 14th-28th, 57 cases, 3 deaths; Pittsburgh, March 14th-28th, 71 cases, 8 deaths.

South Carolina—Charleston, March 14th-28th, 6 cases, 1 death.

Tennessee—Greene county, March 26th, 26 cases; Memphis, March 14th-21st, 1 case; Nashville, March 14th-28th, 2 cases.

Texas—Galveston, March 27th, 1 case.

Utah—Salt Lake City, March 7th-28th, 71 cases.

Washington—Tacoma, March 1st-16th, 4 cases.

Wisconsin—Green Bay, March 15th-28th, 7 cases; Milwaukee, March 14th-28th, 3 cases.

Yellow fever cases were reported during February from Brazil, Columbia, Ecuador, and Mexico.

Cholera prevailed in January and February in the Philippines, India and the Straits Settlements.

Plague was severely prevalent in India and Mexico during February and March. It also occurred in Africa, Brazil, Mauritius, Hawaii, and in the Philippines. One death resulted from this disease in San Francisco, Cal., March 17th.

Changes in the Medical Corps of the Navy.

Week ending March 28, 1903:

P. A. Surg. H. B. Grove, detached from treatment at Naval Hospital, New York, and ordered to duty at Naval Dispensary, Washington, D. C.

P. A. Surg. R. W. Plummer, detached from Navy Yard, New York, and granted sick leave for three months. Asst. Surg. J. F. Murphy, detached from the Glacier and ordered to the Monocacy.

Week ending April 4th:

Medical Inspector G. E. H. Harmon, detached from the Naval Hospital, Port Royal, S. C., and ordered home to wait orders.

P. A. Surg. D. B. Kerr, detached from the Wabash and ordered to the Buffalo.

Asst. Surg. J. H. Payne, detached from the Naval Hospital, Newport, R. I., and ordered to the Wabash.

Asst. Surg. B. H. Dorsey, ordered to the Naval Hospital, Newport, R. I.

Medical Director T. H. Streets, commissioned a Medical Director from January 31, 1903.

Dr. C. F. Ely, appointed Asst. Surg. March 6, 1903.

Asst. Surg. M. V. Stone, ordered to Naval Hospital, Mare Island, for treatment.

Pharmacist I. N. Hurd, retired from active service on account of disabilities incurred in the service, March 28, 1903.

Medical Director A. A. Hoehling, retired, ordered to duty as a member of the Medical Examining Board, Navy Yard, Washington, D. C.

Medical Director G. P. Bradley, detached from duty as a member of the Medical Examining Board, Washington, D. C., and ordered to duty at the Naval Hospital, Washington, D. C.

Medical Director R. C. Dean, retired, detached from duty as President of the Naval Examining Board, Washington, D. C., and to duty as member of the Naval Retiring Board, Navy Yard, Washington, D. C.

Medical Director H. M. Gunnell, retired, detached from duty at the Bureau of Medicine and Surgery, and to be President of the Naval Medical Examining Board, Washington, D. C.

Medical Director C. U. Gravatt, detached from duty as a member of the Naval Retiring Board, and ordered to report for examination for retirement, then home to wait orders.

Act. Asst. Surg. J. C. Devries, ordered to recruiting duty.

Act. Asst. Surg. D. P. McCord, ordered home to wait orders.

Asst. Surgs. R. B. Michels, J. L. Neilson, M. W. Baker, B. Shaw, B. F. Jenness, J. H. Holloway, R. A. Bachmann, H. F. Strine, F. M. Munson, E. M. Brown, J. P. Traynor, R. E. Hoyt, detached from the Naval Museum of Hygiene and Medical School, Washington, D. C., and ordered to their homes to wait orders to sea.

Surg. L. W. Spratling, detached from the Naval Hospital, Portsmouth, N. H., and ordered to the Navy Yard, New York.

P. A. Surg. H. H. Haas, ordered to the Naval Hospital, Portsmouth, N. H.

Changes in the Medical Department U. S. Army.

For week ending March 28, 1903:

Lt. Col. Louis M. Mans, Deputy Surg.-Gen., is granted thirty days' leave of absence, with permission to apply for thirty days' extension.

Lt. Col. H. S. Kilbourne, Deputy Surg.-Gen., is directed to assume temporary charge Medical Supply Depot at San Francisco, Cal.

Capt. Bailey K. Ashford, Asst. Surg., is relieved from duty at Ponce, Porto Rico, and will report in person to the commanding officer at San Juan, Porto Rico, for temporary duty at that post.

First Lt. Allie Williams is relieved from duty at Mayaguez, Porto Rico, and will report in person to the commanding officer, Cayey, Porto Rico, to relieve First Lt. Willard F. Truby, Asst. Surg.

Lt. Truby, upon being thus relieved, will proceed to New York city, N. Y., and report by letter to the Adjutant General of the army for further orders.

The following named Asst. Surg., U. S. Army, have been ordered before the Medical Examining Board at Washington, D. C., on April 1, 1903, for promotion: Captains George M. Wells, H. C. Fisher, H. A. Shaw, and Charles F. Kieffer.

Lt. Col. H. S. Kilbourne, Dep. Sur.-Gen., is relieved from further duty at Presidio of San Francisco, Cal., and assigned to duty as Chief Surg., Dept. of California.

First Lt. Clyde S. Ford, Asst. Surg., is relieved from duty at Fort Wadsworth, N. Y., and assigned to duty at Fort H. G. Wright, N. Y.

First Lt. Wilfrid Turnbull, Asst. Surg., is relieved from duty at Fort Myer, Va., and assigned to Fort Monroe, Va.

Maj. William F. Lippitt, Surg., is relieved from duty at Fort Monroe, Va., and assigned to duty at San Juan, Porto Rico.

Maj. Euclid B. Frick, Surg., is relieved from duty at San Juan, Porto Rico, and assigned to duty at Fort Snelling, Minn.

Maj. Edgar A. Meams, Surg., is relieved from duty at Fort Snelling, Minn., and ordered to the Philippine Islands.

Capt. Bailey K. Ashford, Asst. Surg., is relieved from temporary duty at San Juan, Porto Rico, and assigned to duty at Cayey, Porto Rico.

First Lt. E. H. Hartnett, Asst. Surg., is relieved from duty at Fort Columbus, N. Y., and ordered to report to the commanding officer, Dept. of the Columbia, for duty in Alaska.

First Lt. Allie W. Williams, Asst. Surg., is relieved from duty at Cayey, Porto Rico, and ordered to Fort Greble, R. I., for duty.

First Lt. W. P. Chamberlain, Asst. Surg., is relieved from duty at Fort Greble, R. I., and ordered to Cabana Barrack, Cuba, for duty.

First Lt. J. Ryan Devereux, Asst. Surg., is relieved from duty at Cabana Barracks, Cuba, and ordered to Fort Columbus, N. Y.

First Lt. Willard F. Truby, Asst. Surg., is assigned to duty at Columbus Barracks, Ohio.

Maj. Guy L. Edie, Surg., is relieved from duty at Columbus Barracks, Ohio, and assigned to duty at Monterey, Cal.

First Lt. Samuel L. Steer, Asst. Surg., is relieved from duty at Fort DuPont, Del., and ordered to Army and Navy General Hospital, Hot Springs, Ark., for duty.

First Lt. Irving W. Rand, Asst. Surg., is relieved from duty at Fort Trumbull, Conn., to take station at Fort Wright, Washington.

Antikamnia.—In the "*Reference Book of Practical Therapeutics*," compiled by Frank P. Foster, A. M., M. D., editor of *The New York Medical Journal*, we note the following: "Antikamnia tablets have been much used and with very favorable results in neuralgia, influenza and various nervous disorders. As an analgesic they are characterized by promptness of action, with the advantage also of being free from any depressing effect on the heart." We are pleased at this expression of faith in the efficacy, promptness and absence of untoward after effects of this most excellent remedy. The statement applies not only to antikamnia tablets, but to any of the tablet specialties offered by The Antikamnia Chemical Company of St. Louis, Mo. Physicians desiring samples should write to this company for them, and they will be forwarded promptly, particularly if they mention the *Virginia Medical Semi-Monthly*.

Ammonol.—A correspondent says: "Every year brings a greater increase of clinical reports concerning the efficacy of the standard ethical preparation, ammonol, in such ills as malaria, migraine, influenza, dysmenorrhœa, sea sickness, typhoid fever, etc. It differs from other coal tar products, which assume to be antipyretic and analgesic, in that it actually contains these properties, and as it is combined with a stimulant, it exercises them without danger of depressing effect. The certainty of its physiological action and its hypnotic effects render it invaluable to the practitioner. It has become one of the sheet-anchors of the profession."

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NITROUS OXIDE—ETHER ANAESTHESIA.*

By CHARLES STANLEY WHITE, M. D., Washington, D. C.

Undoubtedly there is so much written about anaesthesia which does not appeal to the surgeon or physician—so much theorizing, demand for recognition of the anaesthetist and harping on the poor remuneration—that it is with hesitation that I present this paper; but I hasten to assure you that my aim is to present a few facts and personal views, with the hope that they may be of some assistance to you in your work.

The choice of an anaesthetic has always been, and always will be, a mooted question. "Chloroform versus ether"—the war cry—has kept the brightest minds of two continents in a mental strife. We are told on the one hand that chloroform depresses the heart, causes death without warning, and, at best, is a dangerous ally; while, on the contrary, ether is slow, disagreeable and wrecks the lungs and kidneys. The percentage of deaths has been variously estimated, and to quote Dr. Wiley Meyer, "We probably do not go wrong in assuming that one out of every 10,000 patients dies while under the influence of ether and one out of every 2,000 while under that of chloroform. This estimate refers only to cases succumbing on the operating table." The remote effects of ether are often a factor in the mortality, but it is impossible to draw a sharp and fast line between the operative and anaesthetic lesions. At the best, statistics upon the subject are not reliable, and it is a lamented fact that the mortality from anaesthesia is not reported as such, probably because it may seem a reflection upon hospital management or that an individual reputation may suffer. We certainly lack honest figures.

Nitrous oxide is conceded to be the safest

*Read before the Columbian Medical Society, April 11, 1903.

anaesthetic known, and it is utilized by the anaesthetist to eliminate the excitement stages common to ether, and, to a less extent, chloroform. It is a common occurrence to hear the anaesthetist coaxing, pleading, commanding and perhaps threatening the patient, while the poor unfortunate, between the "flood of eloquence that is descending" and the pungent ether, coughs, chokes, holds the breath and nearly suffocates. Finally the cone is kept closely applied and the patient is apparently doing nicely, until violent struggling and incoherent muttering supervene to the dismay and annoyance of every one. Acting on one of a number of suggestions, the ether is pushed, probably producing cyanosis with consequent alarm of "the man behind the cone," who promptly admits fresh air and resumes his strenuous task.

Various measures have been adopted to prevent these unpleasant symptoms attendant upon the use of ether, among which may be mentioned the A. C. E. Mixture, Schleich's Mixture, ethyl bromide, ethyl chloride, such sedatives as chloral and opium, spraying the throat with cocaine; but one method after another has been relegated to the past, though ethyl chloride seems to have a future. The practice of using chloroform to full anaesthesia, followed by ether, possesses the disadvantages of chloroform, and is not without danger, for it is stated by Carter² that "the statistics of chloroform anaesthesia show that in more than 50 per cent. of the mortality, death, whether due to cardiac or respiratory paralysis, occurred during primary anaesthesia and when only a small amount of the drug had been taken."

The use of nitrous oxide as a general anaesthetic is not new, but was probably first used with ether by Clover in 1876.³ My first use with this method was in January, 1901, and after some experiments upon my colleague, Dr. Mason, and myself. We used an ordinary inhaler, as employed by dentists, and followed

this with ether or chloroform, but the objection to this method was the inability to admit ether slowly and while the patient was unconscious. An improved inhaler was purchased and used thereafter.

Just the number of anesthetics given by this method I am unable to state, but including the number given by Dr. Kuhn, resident physician of Columbia Hospital, we have administered nitrous oxide and ether in more than a hundred cases, thus placing the procedure beyond the experimental stage so far as we are concerned.

The principal is as follows:

Nitrous oxide is given until unconsciousness is present, then ether gradually admitted until complete anesthesia is manifested and the case continued as in the usual manner. One inhaler is used the entire time.

We require a tank of the laughing gas in the liquid state equivalent to one hundred gallons of the gas. This is connected by flexible tubing to a thin rubber bag holding, when distended, five to seven gallons of gas, the ingress and egress of which is under perfect control by cocks, and the filled bag may be detached and carried from place to place. Beyond a doubt, in the administration of ether a large percentage is lost by evaporation, or mixed with air, and to remedy this defect a rubber bag is used as a reservoir (like the original Clover inhaler), into which the patient breathes, the excess of ether is held, and the amount of fresh air can be regulated to a nicety. After trying several inhalers I became convinced that the Bennett (as made by Tiemann) was the best, as it combines all of the desirable features and has no unnecessary or complicated parts. This apparatus consists of a rubber pneumatic cushion, assuring close approximation to the face, face piece, ether chamber and nitrous oxide attachments, rubber bag and tubing for gas and an ether bag.

In addition to the usual emergency tray no other accessories are necessary, and the physician is now prepared to give nitrous oxide, ether or the combination without assistance and to the comfort of the patient.

The inhaler is put together for nitrous oxide-ether anesthesia, and from half to one ounce is poured upon the gauze in the ether chamber, the bag is filled with gas and the inhaler applied snugly over the nose and mouth. Assure the patient there will be no distressing sensations, but that the anesthesia will be in the nature of

a deep sleep. Tact and encouragement at this stage inspire confidence and facilitates most anesthetics. Gradually admit gas, instructing the patient to breathe naturally. We find they do so without the least reluctance and he soon begins to take deep inspirations, for the gas is tasteless and odorless and imparts rather a pleasant sensation, as most of us can testify. The signs of complete anesthesia are "irregular, stertorous respiration, twitching of the muscles and moderate cyanosis,"⁴ but it is unnecessary to give it to this extent. Slight cyanosis is all that is required, and even this to the uninitiated may appear startling, but it is without danger. At this time (30 to 60 seconds since anesthesia was begun) the entrance and exit of gas is cut off, and the ether is slowly turned on, increasing the amount with each inspiration until "full ether" is indicated, after which ether and air may be added at will. The nitrous oxide attachment is removed and the ether bag substituted. Complete anesthesia is attained in three to seven minutes after the first inhalation of gas. Some men, after complete ether anesthesia, replace the combined inhaler by an ordinary folded towel, a method in vogue in Dr. Howard Kelly's work.

The advantages of the gas-ether method are its safety, elimination of stage of excitement, rapidity, minimum nausea and vomiting following and saving of ether.

Of paramount importance in the use of any anesthetic is safety. Is any method absolutely safe? No. The abolition of the sense of pain and consciousness requires such an impression upon the nervous system that there is always an element of danger, but in nitrous oxide we have the safest substance yet discovered.

H. C. Wood⁹ says: "Of all anesthetics, nitrous oxide is the safest. It is probably administered to more than 750,000 persons yearly and only four recorded deaths are attributable to it. * * * Even when alarming symptoms occur during nitrous oxide anesthesia, the results are very rarely disastrous, because the loss of function has been due, not to the presence of poison, but to the absence of oxygen, and although the paralysis may be complete, the life power sleeps before it dies and is ready to react to oxygen. In the diseases of the kidney nitrous oxide is probably far safer than any of the liquid anesthetics."

No less an authority than Buxton⁵ says: "Whether death from syncope due wholly and

solely to nitrous oxide has ever taken place is doubtful." Contrary to the general impression, and as stated before, the majority of deaths from chloroform narcosis occurs before the patient is entirely under its influence, and it may be attributed oftentimes to the fact that the operation is begun too soon. We know that surgical shock is inversely proportionate to the intensity of the anæsthesia, within the limits of safety. The addition of nitrous oxide does not increase the danger of primary or surgical ether anæsthesia, but unquestionably diminishes it. There is a tendency toward sacrificing safety for time in inducing anæsthesia, unless the surgeon, perchance, is the subject for operation, and in those instances he usually shows much more interest in anæsthesia and the anesthetist than in the daily routine, and in most instances takes ether.

That the stage of excitement is avoided is a lever to raise nitrous oxide-ether anæsthesia into favor, and that is just what has popularized it. In this respect it acts uniformly, though we do meet a "Tartar" occasionally.

Just a word in regard to "bad" cases. It has been my experience that the bad cases occur most frequently with inexperienced or timid anesthetists, and these are the men who, when asked how the patient is doing, invariably reply "He is not taking it well." The truth of the matter is, He is not *getting* it well.

The vast majority of cases simply pass into a deep anæsthesia without a struggle and without a murmur. When this is seen for the first time it is a source of astonishment, even to medical men, and it is with misgivings that they try the reflexes.

In a single operation the time saved is not an important factor, except those minutes eliminated are the horrible ones to the patient; but in routine hospital work from half to one hour may be saved daily unless we have sufficient number of assistants to have the second anæsthetic started before the first is finished, and so on.

The post-operative nausea and vomiting have been a bane to surgery, and though seldom serious, are sources of great discomfort to the patient and annoyance to the surgeon and up to the present time I do not believe a single specific has been found for it. Here the prophylaxis looms up in the best possible light. Anæsthesia is not responsible for all post-operative nausea and vomiting. In major operations, especially celiotomies, the surgical shock is a

factor of considerable magnitude in producing emesis, and we cannot determine what part the anesthetic plays. We frequently see, in appendicitis, the excessive vomiting relieved promptly and permanently by evacuating the pus, and it becomes apparent that vomiting after laparotomy may be due to reflex action from irritation of the pneumogastric. Miller,⁶ in a series of cases, reports 84 per cent. of his cases did not vomit after nitrous oxide-ether anæsthesia, but this is an exception; and such excellent results are not to be expected, particularly where a large proportion of the cases require abdominal section. Other writers state that vomiting is noticeably less, and it is generally accepted. Among serious consequences of post-operative vomiting I can recall two in which the sutures were broken, exposing the intestines (and no one can say how many deep sutures give away and are never discovered), and two cases where pernicious vomiting caused death.

The actual amount of ether saved relieves the kidneys of their share of work, reduces the tendency to vomiting, hastens reaction and diminishes shock. "Quantity for quantity, chloroform is far more irritating than ether. It becomes a question in my mind that if the quantity of ether inhaled could be reduced to something nearer the amount of chloroform whether it would not be safer in mild cases of albuminuria to administer ether in preference to chloroform," so says Carter.² The patient gets the ether uniformly, and I estimate the saving is from 60 to 120 grams of ether every hour.

We have enumerated the advantages; now for the disadvantages:

The inhaler is bulky and necessitates the use of a cylinder of liquid gas weighing twelve pounds, rather too heavy to carry from house to house, but as it is stationery in a hospital this is of no moment. It requires also little more than the ordinary skill and judgment in manipulation. The original cost is an item and must be taken into consideration, but this would not mitigate against its use in most hospitals. The subsequent cost is not greater than ether.

It may be used in every case in which ether can be used and it is "especially recommended in cases of extremely nervous or excitable patients, especially also in strong and muscular subjects" (Hewitt⁷). Nitrous oxide is contra-indicated in arteriosclerosis, as it increases the arterial tension.

The last fourteen consecutive cases of which I kept data, eleven were laparotomies (all women) and the anæsthesia lasted from twenty-five minutes to one hour and fifty-four minutes. The averages for the total number were: Time for loss of consciousness, 2.14 minutes; time required for complete anæsthesia, 6.32 minutes; time patient was under anæsthesia, 1 hour, 3½ minutes; amount of ether used, 90.3 grams. Other data regarding pulse and gas is not of particular interest. The time for loss of consciousness was too long and it really represents complete anæsthesia from nitrous oxide. The amount of ether was less than three ounces an hour, including the quantity consumed in getting the patient thoroughly under, and this is just where a great saving occurs. I have given the gas alone for treating cancer of the cervix uteri with the electric cautery, examinations, vaginal incision and redressings with very gratifying results.

In conclusion, I would urgently recommend its more general use for the reasons previously stated; and while I do not believe it will supercede chloroform, it will be instrumental in reducing those shocking deaths with which we are altogether too familiar. The use of laughing gas alone in dispensary work will be found a valuable aid in examinations and minor surgery. I can say nothing stronger than has been said by Dr. Kelly and Dr. Brown⁸: "In our experience the method has seemed to possess so many advantages to the operator and the anesthetist, and so few disadvantages to any of these, that it has become an indispensable part of our operative technique; and that it has proved satisfactory can be easily judged from the fact that after 200 anæsthetizations with this method, our faith in it, instead of diminishing with experiences, has increased a hundred-fold."

1400 K street, N. W.

BIBLIOGRAPHY.

1. *Jour Amer. Med. Asso.*, Feb. 28. 1903.
2. *Med Record*, N. Y., Nov. 9, 1901.
3. Ditto, 1898, 296.
4. Ditto, 1898, 457, 459.
5. Buxton:—*Anæsthetics*.
6. *Annals of Surgery*, Dec. 1899.
7. Hewitt:—*Select Methods in the Administration of Nitrous Oxide and Ether*, 1888.
8. *Philadelphia Med. Jour.*, Nov. 3, 1900.
9. H. C. Wood:—*Therapeutics, Its Principles and Practice*. 1902, page 89.

FOREIGN BODIES IN THE EAR AND NOSE, WITH CONSTITUTIONAL SYMPTOMS.*

By R. L. GOODBRED, M. D., Mayo, Florida.

In the work of the general practitioner, as well as the surgeon, cases are often met with where children have in play or in careless handling placed a foreign body in the ear or nose. Sometimes foreign bodies—generally animate objects—are found in the ear, nose and even the eye, without the knowledge of the child. So foreign bodies in the nose and ear of children may be divided into two classes, *animate* and *inanimate objects*.

Foreign bodies in the nose are most always inanimate, the process of respiration generally preventing the entry of animate objects. Such articles as pebbles, beads, coffee beans, dried peas, etc., are most commonly found in the nose. The first duty of the doctor is to remove the object. In most cases a bent probe or an ear scoop will remove the impacted body easily. If it be large and soft it may often be easily removed with a pair of forceps, but a hard, smooth body is almost sure to be pushed further up by the use of forceps. Great haste is never necessary and if the nose is much inflamed and swollen measures to relieve the inflammation should first be used. Nasal speculum should be used to locate the foreign body, and if there is pus or other excretion present it should be gently syringed out or removed with a small swab on a probe. Everything else failing, the object should be pushed out through the posterior nares.

The ear seems to be oftener the receptacle of foreign bodies than the nose. Certainly this is true of animate objects. Bed-bugs and roaches sometimes crawl into the ear and die there, becoming a source of irritation. In rural districts ticks have been known to attach themselves to such a depth in the ear that they could only be seen by the aid of a speculum.

Inanimate objects are often pushed into the ears of children by themselves. The same precautions used in extracting foreign bodies from the nose should be employed in extracting them from the ear. When pointed or angular, such as pieces of stick, they may be readily removed with forceps. The exact size, location and nature of the object should be determined and the child put under an anæsthetic. The foreign

*Read before the Florida State Medical Association during its session at St. Augustine, Fla., April 8-10, 1903.

body forceps are often used successfully, but when the foreign body is well down in the cul de sac instruments cannot be introduced behind it without endangering the drum head. In such cases the syringe is our only reliance, and I am not sure but that a syringe is the safest mode in all cases, as the foreign body is nearly always washed out by the reflux of the water striking against the tympanum.

It is not, however, of the mode of extraction, but *the constitutional symptoms* when the foreign body is allowed to remain, that I wish to discuss principally. The standard books tell us that the result will be chronic catarrh and sometimes necrosis of the adjoining osseous tissue. While that may be, and is, no doubt, true, there are beyond any question many and varied constitutional symptoms accompanying the retention of foreign bodies in the ear and nose on which the authorities are as silent as the grave.

I could not better illustrate this fact than by reporting a few cases from my own experience:

Case 1. I was called to see a white girl, aged 18 months, July 3, 1895. She had a high fever, was nervous and restless; pulse fast, but very weak; heavy, dark coat on tongue; edges red. History as related by the family was a very good description of a case of typhoid fever. Child had been ill twelve days when I was called. There was a catarrhal condition of the naso-pharyngeal mucous membrane, though no cough was present. I failed to discover any typhoid abdominal symptoms on my first visit, but they developed the third day afterward. I diagnosed typhoid fever and placed her on treatment for that disease.

On the fourth day after my first visit I noticed that the catarrhal condition was much worse and the child rubbed and scratched her nose almost continuously. I syringed out the nares with warm water and examined them with a speculum. High up in the left nostril I discovered what appeared to be a lump of hardened mucus. With some difficulty I removed it and it proved to be a pea, much swollen and decomposed. Its removal was followed by the exudation of pus and blood. The family seemed much surprised, and denied all knowledge of any foreign body being in the child's nose. The patient died that night from exhaustion.

Case 2 occurred the following November. Patient was the 9-months-old boy of very degraded parents. I found the child suffering

with erysipelas—the entire right side of the head and face being affected, including the ear, eyelids and nose. In using an ear speculum to determine the extent of the eruption, I discovered what I took to be a foreign body of some kind. Failing to remove it with a pair of fine forceps I resorted to the syringe and succeeded. It proved to be an okra seed. As in the preceding case the family professed ignorance of the true condition. Under appropriate treatment the erysipelas was relieved in a remarkably short time.

Case 3 was a negro child, aged 2 years, who was brought to my office because he persistently declared that he had placed a coffee bean in his ear, though no untoward symptoms had appeared. I examined his ears and found the bean pressed right up against the tympanum of the left ear. I syringed it out with little trouble, and a second examination failed to reveal anything abnormal, though he claimed the bean was placed there more than a week before.

Case 4 was a white boy, 2½ years, brought to my office in two hours after he told his mother he had put something in his ear. He was screaming with pain and his temperature was 102° F. He was also very nervous and very much frightened. I anæsthetized him and removed from his ear a part of a green oak leaf, rolled very tightly. The roll was about the size of a large pea. The ear remained sore, swollen and inflamed for several days.

Case 5 was a female child aged 2 years. She presented much the same symptoms and history as Case 1, though she had had fever but five days, and the catarrhal symptoms were much more pronounced, the nose being swollen considerably. On inquiry I found that the family had no suspicion of a foreign body in the nose, but with my former disastrous experience in my mind I examined her nose with a speculum and found and removed a large fragment of popcorn. After thoroughly cleansing both nostrils I administered a nervine to promote rest, and in three days she was up and apparently well.

From these cases we perceive that the constitutional symptoms accompanying foreign bodies in the ear and nose are very different in different cases. I was inclined to think that possibly Case No. 1, which I had diagnosed typhoid fever, might really have been a case of that disease, the foreign body being a complication; but when such a second case occurred so very

much like it, and was relieved so promptly by the removal of the foreign body, I could no longer entertain the proposition.

Of course, the condition of the patient, the character of the foreign body, the presence or absence of infection and the existence of other abnormal conditions as complications all have their influence in determining the character of the constitutional symptoms; but why the presence of a foreign body in the ear or nose should cause erysipelas in one patient, catarrh in another; fever, resulting in a typhoid condition in others, whilst some present no constitutional symptoms at all; why one should be thrown into high, nervous fevers, while others experience no discomfort, present interesting pathological questions worthy of serious consideration and investigation.

I do not attempt to solve these questions, neither do I present any theories; but if, by calling the attention of the profession to the conditions as they actually exist, I can interest more able minds to grapple with, and throw more light on, the subject, I shall feel amply repaid.

TWO CASES OF OSTEITIS OF OS CALCIS.*

By W. H. BRAMLITT, M. D., Pulaski, Va.

Case 1. C. S., about 13 years, of good physique and of a healthy appearance and well grown for his age; family history on father's side good; mother has within the last twelve months developed tuberculosis of the lungs.

I was called to see this patient on Monday, June 24, 1901. Found him suffering great pain in the heel of the right foot with a temperature of 104° F. He had only taken his bed on Sunday evening—the day before I saw him. Only for two or three days previous to taking his bed had he suffered any with his heel, and then very little, walking any where he desired to go without inconvenience. There was tenderness at a point just below the internal malleolus, but no edema or discoloration; strong disinclination to move his foot or to have it moved; no history of traumatism.

Diagnosis, osteitis of the os calcis.

On the afternoon of the next day (Tuesday)

*Read before Southwestern (Va.) Medical Society, at meeting at Pulaski, Va., April 1, 1903.

I visited him again. The cathartic given him on the day before had acted freely, but he had only rested from the effect of the narcotic administered during the night; his temperature, 105° F., increased tenderness on pressure and a slight blush of redness over the tender spot below the malleolus. Diagnosis of osteitis confirmed, and would have operated for removal of diseased bone at once, but my partner, Dr. Painter, being absent in Richmond, I had no one to assist me, so it was deferred until the next day.

On my visit the next day (Wednesday) the spot of redness had extended somewhat, and there was slight edema; rested but little during the night, as the narcotic did not relieve him, and his temperature was high—105° F. Dr. Painter not having returned, as I expected, I deemed it best not to wait longer on him; so I called in two neighbors and after administering chloroform myself, I entrusted its further administration—as I had frequently done before—to one of the men while the other one assisted me in handling the foot. I made an incision about one inch below the malleolus in a line with the long axis of the os calcis down to the bone, raised the periosteum and introduced a spoon curette, the bone yielding readily to light pressure of the instrument, and a cavity as large as an English walnut was scooped out. Everything that would yield to the curette was removed entirely through to the soft parts below the external malleolus, where the soft parts were divided with the knife, making an opening that I could pass two fingers through from one side to the other. The wound was then washed out and douched with bichloride solution and dressed by carrying a piece of gauze through from one side to the other. An external antiseptic dressing of gauze, cotton and a firm bandage was applied.

On the next day, the fever continuing high—104° F.—the wound was opened and douched with a solution of bichloride, 1 to 2000, and a rubber drainage tube inserted and loosely packed with gauze and dressed externally as on the day before. Notwithstanding the incision was free and the drainage adequate, the temperature daily ranged from 103° to 105° F., necessitating the cleaning and dressing of the wound once or twice every twenty-four hours.

This course of treatment was continued up to July 3d—the tenth day from my first visit—

with no abatement of the symptoms, when he was chloroformed and the wound explored for dead bone, but only some small particles could be removed.

The high temperature and pain continuing, with rapid emaciation, on August 12th, assisted by Dr. Painter, chloroform was administered, incisions enlarged and the remainder of the os calcis removed; the posterior extremity of the bone where it was attached to the tendo-achilles was peeled out in an irregular mass as large as the half of a black walnut with Sayre's oyster knife, as was also the attachment of the extensor brevis digitorum muscle. A new incision was made over the cuboid bone, leaving a bridge of skin between the two incisions in order to reach the diseased portion of that bone, which was removed. No other of the tarsal bones was diseased. After this operation the fever somewhat abated, going up to 105° F. in the evening, necessitating the continued and daily use of antiseptics.

But little improvement followed this treatment, though faithfully carried out. So on October 11th—nearly two months from the last operation—the patient was again anaesthetized and the wound again explored and a small portion of dead bone removed from the cuboid. After this operation the fever did not run so high, though the antiseptic dressings were kept up daily; but finally the patient commenced improving in appetite and strength, the fever subsiding gradually, until the normal was reached. He was dismissed December the 20th with the incisions all healed, the formation of new bone in the space left vacant by the removal of the old, far advanced. He in a short time, by a persistent effort, acquired good use of his foot and now scarcely limps when he walks.

Case 2. Was called November 5, 1902, to see N. A. S., about 45 years, of large frame and a well-built man; general previous appearance healthy; no hereditary tendency on father's side, but mother was of a tuberculous family. I found him in bed suffering from what appeared to be a slight attack of acute rheumatism, with some swelling of the left wrist and tenderness of the right elbow and wrist joints. He also complained of his shoulders, but no swelling was evident. He did not at first complain of any pain in his left ankle. He was purged and put on anti-rheumatic treatment and in a few days was very much better. At first his temperature reached 102° F., but in a few days sank

to 100° and scarcely went above. At this time, having no trouble with either foot, but feeling that he was better, he disobeyed orders and would get up out of bed and walk the floor. About the 1st of December he commenced complaining of his left ankle, and in a few days a slight swelling with a little redness appeared below the outer malleolus and extending up the posterior border of the fibula for a distance of one and a half inches, which in a few days showed evidences of fluctuation, which was incised both below the malleolus and behind the border of the fibula, the two incisions communicating under the skin; little or no pus was discharged, but a serous fluid in small quantity, which afforded no relief, though the pain had not been very severe. The disinclination to move his foot, or to allow any one to move it, was great. At this time his temperature ranged from 100° to 101° F. Ten days after the incisions were made, no pus being discharged from either opening, I was satisfied that the os calcis was diseased. Acting upon this assumption, assisted by Drs. Painter and Wooling, he was chloroformed by the latter and an incision made at the right of the first incision just below the malleolus, down to the bone; the periosteum was pushed to the sides and a spoon curette was introduced with but little resistance an inch or more into the bone and the softened bone tissue carefully removed, until the cavity would have received a small English walnut. The wound was then packed with antiseptic gauze and an external dressing of the same character made.

The following day the wound was opened, cleansed and dressed, inserting two rubber drainage tubes, one into the depth of the bone cavity, the other passing from one incision to the other, after which the usual antiseptic dressing was applied externally. These dressings were kept up daily, the temperature ranging about 100° F. The wounds healed in about four weeks without any untoward occurrence, and the patient is now (April 1st) walking on his cane and attending to his business.

Remarks: These two cases present a striking contrast from the dissimilarity of course which each one ran—the first intensely septic, even before any operation was performed, with temperature running up to 105° F., and the other rarely reaching 101° F., without any septic symptoms. But the most remarkable features about the first was the severity of the symptoms

and rapid destruction of bone. Only three days from the time he took his bed up to the time of the first operation, when the bone was found a semi-pulpy mass and easily removed with the curette; the continued high temperature from day to day, notwithstanding the strenuous efforts by the use of cleanliness and antiseptics to control it. After the third operation so decided was the emaciation and weakness that I found amputation would have to be resorted to in order to save his life; but, as the result shows, this step proved unnecessary, the patient making a good recovery with a joint almost as good as ever. In the second case, although the sinus extending up the fibula and containing a serous fluid seemed to be in immediate contact with the periosteum of that bone, yet the bone was not injured and the parts are nearly as mobile as ever and now present an entirely healthy appearance.

SOME OBSERVATIONS IN EUROPEAN HOSPITALS, WITH SPECIAL ADVANTAGES FOR GENITO-URINARY, SKIN AND RECTAL STUDY.*

By EATON K. McNEIL, M. D., Jackson, Tenn.,

Member, American Medical Association; Tri-State (Tenn., Miss., and Ark.) Medical Society, etc.

To visit the clinics and see the great men of the European hospitals in actual work, particularly those who are pursuing a special course of study, is a dream of almost every physician; but comparatively few have opportunities of going abroad. It is well for many that they do not have opportunity until after several years of actual hard roughing it in private practice, for then he can better enjoy the pleasures in the way of sight-seeing, travel and rest from weary practice, and he can more readily grasp, understand, hold and appreciate that which he sees and hears.

I went direct to Berlin, which is about the third city in point of population in the world, but first in cleanliness. This alone would suffice as a subject for an article or could be made a source for exhaustive study in municipal hygiene. I visited Dr. Posner's clinic, where he kindly gave me his personal attention in

demonstrating various instruments and their uses, of both German and French make. Although he had no classes at that season, he had a good clinic. Also was I similarly treated by the assistant to Dr. Wossidlo in his clinic though that eminent genito-urinary surgeon was himself out of the city.

I went to Dr. Lassar's clinic and met this elegant gentleman of international reputation, whose prescriptions and teachings are followed daily by leading dermatologists everywhere. He kindly interested himself to the extent of showing and demonstrating to me some private cases and many improved and up-to-date instruments especially adapted for his specialty. At that time his classes were taking a vacation. He spoke English as well as I do, and after he had spent some time with me he turned me over to his valuable assistant, who took me through the hospital and pathological museum, which contains hundreds of wax specimens.

At Prague, Dr. Pick has a fine clinic, but his clinics were suspended. One would be rather lost in languages, as there are no less than five different tongues spoken here. This is the only city I have ever visited where I found trouble in getting English understood. Dr. Pick, Jr., speaks English well, having spent several years in this country and England. His father does also, the latter being a member of some of our American societies.

Vienna is the ideal place to study medicine in all its branches. The Government Hospital is a building covering about twenty-five acres of ground. The apartments are divided by nine or ten courts, within which are fountains, trees, flowers and seats where convalescents have open air. The hospital has 2,000 beds, which are always full, while hundreds are treated daily in the out-patient department. For a more extensive description of this great building and other European hospitals, see *Medical Record*, Vol. LIII., No. 20—article by Dr. J. Preston Miller, of Washington, D. C.

The most interesting clinic to the new comer is that of Dr. Neumann, or what might be termed the "wideopen clinic," where modesty is unheard of on venereal, dermatological and syphilitic diseases. Here the patients are all brought into the room at once, dressed in their hospital uniform, composed of a blouse and trousers for the males and a skirt for the females. They are lined up along the wall and the professor calls them out one or two at a

*Read before the Tennessee State Medical Association during its session at Nashville, April 14-16, 1903.

time and before the class, removes their clothes and makes his demonstrations.

The best teaching I found here was in the pathological departments, both in the well-equipped laboratories and in the post-mortem rooms. Here nothing escapes the attentive eye of the demonstrator. A man can put in as much time as he wants to from 7:30 A. M. to 8 P. M. on as many branches as he likes. These professors do nothing but teach. They treat Americans and other foreigners kindly. Most of their students are foreigners. While they all speak English well, their set lectures and demonstrations are in German.

Besides this great Government Hospital there is the Polyclinic nearby, which is extensively patronized by Americans also.

In Munich there is a fine hospital for the diseases of women. The clinic of Dr. Winkel for lying-in cases is excellent, though I did not do more than go through his well-equipped hospital.

In Paris the hospitals and clinics are excellent, and the professors are kind toward Americans. In the St. Louis Hospital, although a general hospital, I only visited the genito-urinary and skin clinics, and spent hours in the museum, where are hundreds of wax specimens and models, from which photographs and reproductions have been made by eminent men of England, Germany and America. In Hotel Dieu I visited the eye clinic with a friend who was especially interested in that branch of study, and among other things we saw one young surgeon perform seven cataract operations neatly, nicely and aseptically in about one and one-half hours.

I failed to see Pozzi and Guyon operate, as the former was still suffering from the wound he received on his right hand during a duel in the early summer and the latter was on his vacation.

The most interesting place for a medical man to visit in Paris is Pasteur's Institute, which consists of the original building, which contains the tomb of Pasteur; rooms where patients receive treatment for hydrophobia, many animals in different stages of inoculation and a fine scientific library. Just across the street are the new buildings of the bio-chemic and bacteriological laboratories elegantly fitted up.

Just back of these is the contagious disease hospital and a splendid morgue or post-mortem room for autopsies. This contagious disease

hospital is constructed on the most improved aseptic method. It is composed of two wards of twelve rooms each about 10x12 feet. Each room has concrete floor and walls running half way up and finished in stained glass. There are no crevices or cracks, the floor is inclined to one side so that a stream of water can be turned in to wash it out, the water running into the sewer. The furniture consists of an iron bedstead with a rubber-covered air mattress and pillow and an iron chair and washstand. There is plenty of light, the sun being shut out by outside shades and awnings when necessary. Each room opens into a corridor which leads to a large, well-heated recreation and convalescent hall or court, surrounded by, and covered with, glass and containing potted flowers and comfortable seats. This leads into a beautifully flowered open court. The diseases treated here are diphtheria, tetanus, tuberculosis and the contagious rashes. This was just completed and had not yet received patients. The laboratories are the best equipped I have ever seen and the cost for courses in them is quite reasonable.

In London I spent most of my time in the special hospitals, though I took opportunity to visit several of the general hospitals, notably the London, Guy's, King's, St. Thomas', St. Mary's, Westminster, Charing Cross, Middlesex, St. George's and others. As deserving of special mention, St. Thomas' I believe is the finest, being composed of seven up-to-date buildings along the bank of the Thames. They are all old institutions and most of the buildings are old, but they are thoroughly equipped and have the most brilliant men of England connected with them. At St. George's I saw Mr. Herbert Allingham operate, and among other operations, I saw him perform very prettily a colotomy on account of a cancer high up in the sigmoid. Mr. Allingham is a beautiful operator. He is a son of the distinguished Mr. William Allingham, a rectal surgeon of international reputation, who, in his old age, lately married a trained nurse and has retired from practice. I also saw Mr. Allingham operate at the Great Northern Hospital. At St. George's there are several operating rooms where operations are going on at the same time. These rooms are nicely finished off in tiling and marble and are strictly aseptic. I had the pleasure of seeing Lord Lister, the prime mover in antiseptics, one day in King's College.

I went to Mr. Malcolm Morris's private laboratories for the Finsen treatment by light of various dermatological affections. The apparatus for this treatment is quite an elaborate and expensive one, costing something like £125. sterling. It consists mainly of a strong electric arc light of 2,000 candle-power, several prism telescopes leading from it and conveying the light to the affected parts. The apparatus is so arranged as to exclude the red and yellow, or heat rays, and admit mostly the violet. This apparatus is a private venture of Mr. Morris's and his associates. Though it is not a pay institution, the patients pay a little something for treatment, and he has received some voluntary contributions. The greatest expense is the running of it, the expenses being for electricity, an electrician, a corps of trained nurses—one of them being direct from the Finsen Laboratory in Copenhagen. He has very successfully treated lupus vulgaris, which leaves a very fine, white scar, not near as much as from scraping; also lupus erythematosus and benefited rodent ulcer, and has tried it with benefit on several other affections. For more elaborate article on the Copenhagen laboratories and their technique, see *Philadelphia Medical Journal*, October, 1899, and also an article by Dr. J. W. Kime, of Fort Dodge, Iowa, on the Light Treatment, the *A. M. A. Journal* of April 11, 1903.

It was my pleasure to hear a clinical lecture by the venerable Mr. Jonathan Hutchinson, who, dare say, is one of the best known living authorities in medical circles of to-day. He lectured at the London Polyclinic, which is, by the way, patterned after our own New York Polyclinic. Though at present in its infancy, it is destined to be a great institution for teaching. Mr. Hutchinson is as good and clear a talker as he is a writer, and always says something worthy of close consideration and thought. He is approached easily and will give a plain, clear answer, directly to the point, on any question asked him. It is a rare pleasure to talk to a man of so much learning and who has attained so many honors, and find him so plain in his manners. It is not honor that he seeks, for I have been told that when the Queen offered to knight and bestow the title of "Sir" upon him his answer was that he had lived and made his reputation as simply Mr. Jonathan Hutchinson, and as such he wanted to die. A pity some of our "millionaire beauties" would not take a lesson from this grand old man and not seek titles.

Of the special hospitals I desire to mention are the St. Mark's Hospital for fistula and other diseases of the rectum—the only one in the world, I believe, for rectal diseases exclusively—and St. Peter's for stone and other urinary diseases.

In St. Mark's the senior surgeons are Mr. Goodsall and Mr. Edwards and the juniors Mr. Furnivall and Mr. Wallis, all as clever as can be. Mr. Edwards, especially, is one of the prettiest and quickest operators I ever saw, and is as nice a gentleman as one would desire to meet. He also operates at St. Peter's and West London. They perform mostly the cut and ligature operation for hemorrhoids (also called the Salmon operation, after the famous surgeon who founded this hospital), though any of the other well-known operations are performed when the surgeon deems it better. The cut and ligature operation, however, has been found to be the most satisfactory in the general run of cases.

In St. Peter's you see all the modern operations for stone or other disorders of the genito-urinary tract under the guidance of the skilful hands of others besides Mr. Edwards, as Mr. Harrison, who is an old authority in this special branch of surgery; Mr. Fenwick, who is not only a bright, skilful operator, but is a recognized authority on, and knows more about, cystoscopy than any other living surgeon, not even making him second to Nitze, the originator of the cystoscope, and Mr. Freyer, late of the Bengal Department of the English army, who is a quick and pretty operator. Among other operations I saw him remove the lobes of an enlarged prostate by a supra-public opening, seemingly as easy as if he had been cutting a stricture. He has done nearly 2,000 operations for stone. He is an elegant gentleman and has the honor of obtaining the largest fee ever paid a surgeon—viz., 10,000 guineas, equal to about \$52,000—for crushing and removing a stone from a Prince of India while stationed in that country.

For stone in the bladder the crushing operation, or lithotomy, is most commonly performed, though other operations are frequently done here.

I saw many operations on the kidney here—some for stone, some for exploration and some for extirpations.

For enlarged prostate, if not removed, vasectomy is most commonly done, only one side at a time being operated upon, and ten days or a

fortnight being allowed to elapse before operating on the other side. Castration (unilateral at a time) is sometimes resorted to, especially in tubercular cases where the testicle is involved.

As to asepsis and antisepsis I must confess I was very much disappointed in Germany, though I saw comparatively few surgical cases, but from what I did see, I was disappointed. In France they are much better, in England they are very much better, but in New York they are par-excellent.

107 West Main street.

CASE OF ECTOPIC GESTATION, WITH DIAGNOSIS AND CLINICAL HISTORY.*

By E. W. PEERY, M. D., Rural Retreat, Va.

Mrs. H., of Bristol; aged about 23; married three years, though had not conceived prior to August, 1902. Last menstruation August 16th. About ten days after this date she was thrown from a horse and fell very heavily. She reported very great pain and soreness in lower abdomen for several days, so much so that she kept her bed. This fall may have been the cause of ectopic gestation in this case by producing an inflammatory condition of the Fallopian tube.

During the first two months of gestation patient had the usual nausea, though she felt very uncomfortable all the time, and there were frequent pains in abdomen even when quiet. Walking caused considerable pain in lower abdomen and unusual fatigue. On two or three occasions at irregular intervals there was slight metrorrhagia.

About the latter part of October she came on a visit to her father, in Wythe county. On the morning of November 4th, while out in the yard, she suddenly cried out with severe pain in the abdomen, which was attended with syncope and very great pallor. She was assisted to her room and after a few moments of quiet in the recumbent position she felt some relief, though pain was very severe all day. About 9 P. M. a physician was called. He reported that she had severe pains in bowels, with considerable swelling and tenderness, pulse weak,

pallor very marked and extremities cold. Trouble was thought to be colic, and a large enema was given which removed considerable fecal accumulation and gas, after which patient experienced some relief. She kept her bed for two or three days and then for nearly a week went about, though during the time she felt pain, fullness and considerable soreness in the abdomen. Said she was so weak and painful that she could scarcely move.

On October 19th she drove about two miles to visit a relative. A few moments after her arrival she suddenly felt severe pain in the lower abdomen and fell almost prostrate from shock. I reached the bedside within an hour and found the patient suffering very much; in fact, crying out with pain. The clinical picture suggested an exhaustive hemorrhage. The surface was cold and almost bloodless; weak, rapid pulse and considerable thirst, though not such a degree of yawning and "air hunger" as is sometimes seen in cases of external hemorrhage. Vaginal examination showed no hemorrhage. Uterus was found a little low and slightly immovable. There was very little pouching from Douglas's cul de sac, but all about the uterus there was felt what seemed to be a semi-solid roof, extending uniformly to the bony wall of pelvis. Palpation of abdomen showed uniform swelling and very great tenderness even to the ensiform cartilage. On percussion considerable dullness was found over lower abdomen.

After getting the history of the case diagnosis of ectopic gestation, with rupture and concealed hemorrhage, was made. Patient was given 10 m of adrenalin chloride (1 to 1,000 sol.) and also morphine and atropia. Then a firm-fitting bandage was applied about the abdomen and hot water bottles placed to the body and the extremities. Pulse soon improved, but symptoms continued so alarming that ergotole was also given by the needle. Transfusion of saline solution was indicated, but as I was not prepared to give it, and as there was no nausea, patient was allowed considerable water, which was taken with relish. In a short while her condition was better.

It was decided to wait until the next day before operating, for the double purpose of being better prepared for operation and to give time for patient to rally from shock.

Patient was in better condition next morning. Pulse 116, temperature 100. Dr. Gra-

* Read before Southwestern [Va.] Medical Society, during its session April 1 and 2, 1903, at Pulaski, Va.

ham, of Wytheville, was called to do the operation, and when patient was placed on the table (November 20th) temperature had reached 102 F. The operation, which was done neatly and with dispatch, was followed by little shock, considering the patient's condition.*

Next day, November 21st: 8 A. M., temperature, 103 $\frac{3}{4}$; pulse, 124. 8 P. M., temperature, 101 $\frac{1}{2}$; pulse, 120.

November 22d: 7 A. M., temperature, 101; pulse, 112. 6 P. M., temperature, 101; pulse, 96.

November 23d: 6 P. M., temperature, 101; pulse, 96.

From this time until December 8th the evening temperature was about 100 F. On the evening of the 23d—three days after the operation—on examination it was found that some decidua had presented at the mouth of the womb, though patient had not complained of much pain. This was carefully removed with the finger and was found to be a considerable sheet of decidual membrane. Patient had been given hot bichloride douche daily since operation, and these were continued. Lochia was scant, though continued several days. On the day following the operation, as was expected, some cellulitis or congestion about uterus was noticeable, fixing it slightly. Three days later breasts were inflamed and there was some little accumulation of milk.

After the operation patient was given nourishing fluids by enema and nothing allowed in the stomach for twelve hours, and then only cracked ice. No nourishment or water was allowed by the mouth until after twenty-four hours. Patient had very little nausea and did not vomit a single time.

Ten days after the operation, as stitches were causing considerable irritation, they were removed and strips of adhesive plaster applied. In order to support abdominal walls and relieve tension of deep muscular layers, a long strip was placed on each side, first attached near the spine and brought around just above the crest of ileum, lifting and drawing in abdominal wall considerably, then over wound and down toward inferior spinous process of ileum. Support of this kind on each side relieves tension on cicatrix admirably well.

On the eleventh day after operation there was slight phlebitis of left leg. The limb was not

appreciably swollen, though continued a little painful and sensitive for several days. A few days later patient complained of occasional deep, darting pains, not severe, on right side, which was attributed to irritation from ligature and tissues tied off. This caused little notice and patient improved rapidly until December 25th. At this time menses appeared. The flow was slight, lasting four days, but there was some fever and considerable tenderness and pain in the hypogastric region. This condition passed off rapidly and patient was soon convalescent.

LACERATION OF THE PERINEUM INCIDENT TO PREGNANCY.*

Pathological Anatomy and Clinical Findings.

By CHARLES R. ROBINS, M. D., Richmond, Va.,

Lecturer on Gynecology, Medical College of Virginia.

The proper appreciation of the subject must include the anatomy of the pelvic outlet, the function of the structures there found, a classification of the varieties of laceration and the sequelæ dependent on each.

Anatomy. 1. In dissection of the female perineum, after removing the skin and subcutaneous tissue, we come upon the first structure of importance in the perineum, the deep layer of the superficial fascia. It rises from its attachment to the exterior surface and free border of the rami of the public arch, and passing backward it curves over the transversus perinei muscles, where it enters into the bischiatic fascial junction. The centre is prolonged backward and merges into the tendinous center of the perineum. The sphincter ani is situated in this plane and is attached to the tendinous center of the perineum in front and the coccyx behind.

2. On removing this layer of fascia the sphincter vaginae and superficial transversus perinei muscles are exposed. The sphincter vaginae arises on either side of the vagina from the dorsum of the clitoris. Passing backward it broadens out and is inserted in the angle of the junction of the superficial fascia with the triangular ligament. Some of the central fibers converge with their fellows of the opposite side

*The operation and conditions have been left for Dr. Graham to report.

*Read before the Richmond Academy of Medicine and Surgery, March 24, 1903.

and are inserted in the tendinous center of the perineum. The superficial transversus perinei muscles extend from the internal surface of the tuberosity of the ischium to the tendinous center of the perineum.

3 Beneath these we come to the interior layer of the triangular ligament. This is attached to the rami of the pubic arch laterally, its base joining with the superficial fascia and levator fascia, or posterior layer of the triangular ligament, to form the bis-ischiatic fascial junction. The central portion of the base is attached to the tendinous center of the perineum. It is composed of dense fibrous tissue. Beneath this structure are some unimportant muscles which it is unnecessary to describe.

4. We then come upon the levator fascia, the anterior portion of which is also called the posterior layer of the triangular ligament. It is given off from the obturator fascia, from which it arises from the interior of the body of the pubes anteriorly to the spine of the ischium posteriorly, and lies inferior to the levator ani muscle. From its origin it spreads to the median line. It is perforated by the vagina to the margins of which it is attached.

5. The next structure is the levator ani muscle. The anterior portions, also called the levator vaginae, are of interest to the gynecologist. They arise from the interior surfaces of the bodies of the ossa pubes, pass posteriorly on either side of the vagina until they approach the interval between the vaginal and rectal outlets, when they curve internally, to be attached to a fibrous median raphe, the exterior of the raphe being attached to the tendinous center of the perineum. It supports the posterior wall of the vagina. The posterior portion arises from the obturator fascia and is inserted into the tendinous center of the perineum to the wall of the rectum and the coccyx.

6. The recto-vesical fascia is the next structure. It is given off from the pelvic fascia and forms a sling at the outlet of the pelvis to support the viscera there presenting.

Function. We find then, that the pelvic outlet is closed in by two strong layers of fascia, the recto-vesical and the levator, by one important muscle and two slight muscles. The sphincter vaginae and transversus perinei muscles are not sufficiently powerful to exert any marked effect, and for practical purposes, need scarcely be considered here. The function of

these structures is to make the pelvis a closed cavity in the female as well as in the male. As the rectum is closed in the same manner in both sexes, we shall confine ourselves to the manner in which the vagina is closed. It has been a question of dispute as to whether the muscles or fascia were most essential, but the proper answer, doubtless, is that both are equally essential. It will be observed that the vagina, as well as the rectum, is brought sharply forward toward the pubes before making the point of exit. The outlet of the rectum is controlled by the sphincter ani, but there is no analogous muscle controlling the vagina. The angle or flexion in both organs is maintained by their insertions in fasciae, which, it will be observed, have their origin above and in front, and are inserted about the vagina and rectum and support them as by a sling. The outlet of the vagina being thus brought forward, the vagina rests upon the posterior wall by which it is supported. The vagina has, under such normal conditions, a valve-like function, and the pelvic cavity is completely closed. What then, is the function of the levator ani? It will be observed that this muscle arises from the pubes, encircles the vagina and is inserted in the perineum. Its whole force is exerted forward and upward, bringing with it the perineum and posterior wall of the vagina. Its function, then, must be to reinforce the fascia when any strain is put upon it.

These facts may be easily demonstrated upon the living subject. If a woman with a normal perineum is examined, after introducing the finger just within the entrance, if pressure is made downward and backward, it will be resisted by a firm band of tissue composed of the muscles and fascia previously described. The posterior wall of the vagina lies in close apposition against the anterior wall. On introducing the finger further we can trace throughout its course the floor of fascia and muscle covering in the outlet of the pelvis. On removing the finger and directing her to strain down, as if to defecate, the perineum will be observed to spring up at once, thus effectually closing the vagina.

At this point the question may be asked: "How is the perineum concerned in the support of the internal organs, as there is no direct connection between them?" The answer is, that the sole support given is by making the pelvis

a closed cavity. Under such circumstances pressure is equal in all directions upon the contained viscera.

Varieties. The classification of lacerations of the perineum given by Penrose is, I believe, the most logical, and is as follows: Slight median, median involving the sphincter ani, laceration in one or both sulci, subcutaneous laceration.

The slight median laceration is the one that extends directly backward in the median line. Beyond the fact that it gives inconvenience during the healing process if not properly repaired, there are no sequelæ. The reason for this is that as it extends only in the median line the supporting structures are not injured. There is simply a division of the perineum, with the supporting structures inserted in it and performing their function.

In the median involving the sphincter ani the sole sequelæ are connected with the incontinence of feces. The tear being in the median line, there is no impairment of the supporting structures of the perineum.

On the other hand, the third variety—laceration in the vaginal sulci—presents an entirely different clinical picture. While on the external aspect the tear is in the median line, on exposing the posterior wall, it will be observed that the tear is either continued up one or both sulci. In this case the fasciæ and muscles are torn across in their course and the perineum becomes more or less functionless according to the tear.

The subcutaneous laceration is similar in all respects to that just described, except that there is no external tear.

Sequelæ. The effects of lacerations are so far reaching and include so much that I shall not even attempt to enumerate them all, but shall only mention briefly those of the most importance.

The slight median laceration has no sequelæ.

The median laceration involving the sphincter ani, establishes incontinence of feces. If the sphincter ani is not entirely severed the incontinence is partial, and is only exhibited when the feces are fluid. We find no prolapse of the vagina or internal organs. Should prolapse be present we will find that there is an associated laceration in the sulci. The sphincter ani contracts, as does all muscular tissue, and in some cases lies entirely behind the anus, the ends of the muscle being denoted by dimples

at the points where the scar tissue is drawn in by the muscle. The mucous membrane of the rectum when involved shows up as a patch of strawberry red. The septum between the rectum and vagina is bordered by a line of firm cicatricial tissue. In severe cases the tear may extend up the septum for several inches.

Laceration in the vaginal sulci destroys the function of the perineum. It is the most frequent and most important. Referring to the manner in which the vagina is closed, we have observed that this is accomplished by the posterior wall being brought up against the anterior by the perineum, being supported in this position by the fasciæ reinforced by the levator muscle. These have their origin above and in front, encircle the vagina and are inserted into, and form, the perineum. When the tear is in the sulci, it tears through these important structures and destroys their function in proportion to the extent of the tear. If only one sulcus is affected the loss of function is partial; if both are involved it is more or less complete, according to the extent of the tear. It being the nature of muscular tissue to contract, the divided edges are widely separated when cicatrization has taken place, and being deprived of their function the muscles and fasciæ undergo atrophic changes.

That the supports of the perineum are impaired or lost is readily demonstrated by the changes that will be observed as taking place. The anus, instead of being drawn up toward the pubes, making a deep anal cleft, will drop back toward the coccyx, the anal cleft becoming shallower and the anus pouting and often exhibiting the formation of piles. The perineum, instead of being convex and in a tonic condition, will have a relaxed and flabby appearance. The posterior wall of the vagina is no longer in close apposition with the anterior, and we have a patulous vagina. The vaginal walls, not being supported, begin to prolapse, with the formation of rectocele and cystocele, which is favored by two causes, the change in the direction of the vagina and the loss of muscular support. Under normal conditions when a woman is in the erect position the direction of the vagina is nearly horizontal. When the sling of fascia and muscle, which holds the outlet forward, is ruptured the outlet drops backward and the vagina approaches a vertical direction. The anterior wall, under such circumstances, derives no support from the poste-

rior. The effect of the loss of muscular support is especially evidenced when the patient strains, in the act of defecating. The force from above is not counterbalanced by the muscular action of the perineum and the vagina is everted with each effort. This forms one of the best tests of the loss of support of the perineum. The prolapse of the vagina drags with it the walls of the rectum and bladder. The further development of rectocele is favored by the fact that the direction of the fecal current is not controlled by the action of the levator ani, but bulges forward against the posterior wall of the vagina. The formation of cystocele is induced not only by the prolapse of the vagina, but also by the fact that the perineum has dropped back from beneath the base of the bladder.

Another common sequel is the prolapse of the uterus and retrodisplacement. The retrodisplacement occurs as the first stage of prolapse, and is also induced by the traction of the posterior wall of the vagina on its attachment to the uterus. The prolapse of the uterus is directly induced by the failure of the perineum to close the vaginal outlet. When the pelvis is a closed cavity pressure on the contained viscera is equal in all directions. When the function of the perineum is destroyed and the vagina is patulous, the abdominal pressure on the uterus above is opposed only by the atmospheric pressure from below and the uterus prolapses, and with each effort made by the patient is driven further downward. Without going into mechanical laws to account for this, it may be illustrated by a very simple example. When the drain pipe of a wash basin is closed with its plug and the basin filled with water the hand may be immersed in it and moved about without feeling pressure in any direction. If, however, the plug is removed, the hand has to support the column of water above it and is driven down into the hole in the bottom of the basin.

Subinvolution of the vagina and the uterus are also frequent sequelæ. Endometria is usually present as a result of subinvolution and displacement, and also of the liability of infection, owing to the patulous condition of the vagina.

The sequelæ of the subcutaneous laceration are the same as that just described, as the pathology is the same.

PREVENTION AND TREATMENT OF LACERATIONS OF THE PERINEUM.*

By MARVIN E. NUCKOLS, M. D., Richmond, Va.,

Adjunct Professor of Gynecology, University College of Medicine, Richmond, Va.

In the outset I wish to state that in my opinion all lacerations are not preventable. Still a laceration, other than one of the first, or certainly one of the second degree, should be extremely rare, and on the other hand all lacerations do not require sutures, except probably to cover a raw surface, thus closing a gateway to infection.

The reason why some lacerations must almost of necessity occur will depend, in some cases, on the mother, in others on the size of the child and the position it occupies, or may depend on both. A woman with a tense, non-resilient levator ani muscle, whose vagina is lacking in secretions, and adds to this strong pains with short intervals, and consequent rapid labor, laceration in some degree will probably take place. Now, if we have added to this a child with large head which does not mould well, or one which has rotated posteriorly, a tear must of necessity occur, and sometimes one of the third degree. Posterior positions often cause complete lacerations—the head not being able to flex completely ploughs its way through the perineum.

I believe that all primipara should have chloroform during the latter part of the second stage of labor, because it quiets the woman, who is usually nervous, slows labor somewhat, allowing the parts to relax, and will give time to shell out the head. To prevent lacerations we must remember the axis of the pelvic outlet, and in using forceps always make traction in the axis. Usually it is better to remove the forceps when the head presents at the vulva. In vertex presentations always maintain flexion, particularly in posterior positions, so that the occiput will rotate to the front. When the occiput presents at the vulva hold the head back till the neck engages under the symphysis, then place the left hand over the parietal eminences, making pressure, and insert two fingers of the right in the rectum and make traction, allowing the head to extend during the intervals between pains, if possible. After the head is delivered, give your attention to the shoulders,

*Read before the Richmond Academy of Medicine and Surgery, March 24, 1903.

for they often cause laceration after the head has escaped without damage. Lift the head towards the mons veneris and insert two fingers under the lower shoulder, letting them act as a plane over which the shoulder glides, then lower the head and deliver upper shoulder. Episiotomy is recommended by some as a means of preventing laceration. I have never resorted to it, and as it does not seem to be based on sound principles, I do not think I shall ever.

The treatment of lacerations will depend on the character and degree. If of the first or second degree it should be repaired at once; if of the third degree the parts are contused and lacerated so badly that to attempt repair means failure. Central and lateral tears vary somewhat in treatment. In lateral tears the levator ani is usually torn and should be sutured very carefully, while in median tears only the skin, and sometimes the transversi perinei, are torn, and as these do not give much support, so much care in getting accurate apposition is not essential.

It is not absolutely necessary to suture tears of the first degree, still it is better, for we can never be sure of the cleanliness of the nurse. One or two stitches of cat-gut or silkworm-gut introduced and brought out well away from the edges, because the parts are swollen, is all that is necessary. Tears of the second degree should also be repaired at once. Anesthetize the patient, sterilize the parts, pack the vagina with gauze to dam back the discharge from the uterus. Introduce sutures of cat-gut or silkworm-gut well away from the margin of tear and approximate parts carefully. Should this fail, or the laceration be complete, a secondary operation should be done three or four months later. Kelly's modification of Emmett's operation is the most satisfactory at this time.

We will suppose the parts have been sterilized, the patient anesthetized and put in the proper position. The most prominent point in the median line of the posterior wall of the vagina is caught up with a tenaculum. The caruncle on each side is also caught up with a tenaculum and each pulled toward each other. This throws the posterior wall into lateral folds and outlines the surface to be denuded, which is outlined with a knife or sharp-pointed pair of scissors. Be careful to outline all scar tissue. With scissors curved on flat and to the left, denude all surface outlined, being careful not to go deeper than the mucous membrane.

After the whole surface has been denuded all bleeding is stopped and the surface irrigated. The sutures of chromicized cat-gut are introduced, beginning at the upper angle on each side. The sutures, instead of going perpendicularly downward, are carried obliquely downward toward the vulva, so as to lift up the vaginal wall. After each lateral angle is sutured and tied the suture of silkworm-gut is introduced. It starts on the skin surface near the upper angle of the denudation, is carried through and brought out on the lateral vaginal wall just within the mucous membrane, taking a good hold on the levator ani muscle, is then carried across through the apex of the undenuded surface in the median line to opposite side into the lateral vaginal wall and out through skin as was done on other side. When tied it brings three points together, the caruncle on each side and the crest of the rectocele. The remaining surfaces are closed by a few silkworm-gut sutures in the skin.

When the laceration is complete, the rent in rectum is repaired first. On examination we can locate the retracted ends of the sphincter by dimpling of the mucous membrane. The rectum is packed with gauze, to which a string is attached to facilitate removal on completing operation. Fine cat-gut is used to repair tear in rectum. Sutures are introduced one-eighth of an inch apart and tied in rectum. The sphincter is brought together with silkworm-gut passed from the skin through the sphincter not too close to the retracted end, around the rectal tear and out on the opposite side in the same way. Other silkworm-gut sutures are introduced from the skin through the lower margin of rectum and anus and tied. The suture in sphincter is now tied, puckering the whole rectal tear as a purse-string. The remainder of the tear is closed as described above.

The bowels should be kept well open after operation, the parts kept clean and stitches removed on ninth or tenth day.

DISCUSSION OF PAPERS BY DR. ROBINS AND DR. NUCKOLS.

Dr. Jacob Michaux emphasized the point made by Dr. Nuckols as to the part played by the shoulders in producing lacerations. He had several times seen them tear after the head had escaped without damage.

D. J. F. Winn considered too rapid expulsion at the time of a pain and imperfect exten-

sion the chief causes of perineal tears, and that the key to the best method of preventing them was found in restraining the precipitate advance of the head by properly directed pressure on the head itself backward and upward against the arch of the pubis. In making this manipulation it was absolutely essential that the head should not be permitted to escape at the time of a pain. If thus managed from the moment it began to distend the vulva, the danger of laceration was minimized, for we more perfectly preserved the normal correlation between the suboccipito-bregmatic circumference and the vulval opening, thereby insuring the delivery of the head by its smallest diameter. Chloroform anesthesia was a valuable adjunct to all methods. With reference to that method which called for the placing of one finger in the rectum, in his experience it had no advantage over the method outlined above. He preferred the dorsal posture with the buttocks to the edge of the bed and the perineum in full view. In conclusion, he stated that after all it was largely a matter of personal equation, according as one was familiar, and consequently expert, in any one particular method practiced.

Dr. Greer Baughman believed there were more lacerations in labor now than formerly, because there was more tendency to use the forceps, than which there was no more dangerous instrument when improperly employed. To prevent lacerations two points were important: The forceps were not to be applied unless absolutely necessary. If it were well known how to protect the parts lacerations would be nil. The head was to be kept well flexed until the vertex was delivered. It was never to be delivered during pains, but between them. Finally, the vulva was to be kept well moistened.

Dr. W. J. West did not believe that the forceps, properly applied, were dangerous. He thought that we were prone to use chloroform more because of the importunities of the patient and friends than of necessity; he had employed it but three times and had had very few tears.

Dr. Robins said that to prevent tears the parts should be allowed to relax naturally before the forceps were applied, and that the waters should be preserved till they appeared at the vaginal outlet, as they were one of the best means of dilating.

Dr. Nuckols, in closing the discussion, agreed that there was risk of infection from placing the fingers in the rectum, but they could be cleaned, and the advantages outweighed the disadvantages. In some cases impending rupture could be thus foretold. The head could be extended with the fingers of one hand in the rectum, while those of the other could be kept on the parietal bones.

TREATMENT OF CARBOLIC ACID POISONING.*

By JOHN R. ATWELL, M. D., Washington, D. C.

I hope the subject I bring to your notice this evening may prove of interest to you, in view of the fact that carbolic acid has of late become the commonest agent used in self-destruction, especially among the female sex. The large increase of suicides from carbolic acid can best be shown from the following statistics: Of deaths from suicide in England from 1866 to 1870, 1 per cent. only were from carbolic acid. From 1890 to 1894, 28 per cent.

The cause, I think, is apparent. Since Lord Lister first brought the drug into prominence, by making it his principal agent in his practice of antiseptic surgery, it has become widely advertised as an antiseptic and disinfectant, and has become better known and more generally used by the laity than any other pharmaceutical preparation on the market. It can be easily procured from the druggist on the pretense of using it for toilet or disinfectant purposes.

Phenic or carbolic acid is obtained by the fractional distillation of coal tar at from 338° to 446° F. Pure carbolic acid occurs in colorless needles, melting at 95°, and having a characteristic smoky odor and when diluted a sweetish taste. It is soluble in alcohol, ether, chloroform and from twenty to thirty-five parts of water. The addition of 5 per cent. of water to the crystals forms a clear solution.

Locally applied it is an energetic caustic, causing rapid disintegration of the part, with the formation of a hard mass, which does not disappear for some time. Upon the mucous membrane it causes preliminary burning, followed by anesthesia and the formation of a white eschar.

* Read before the Therapeutic Society of the District of Columbia, December 13, 1903.

When a toxic dose of carbolic acid is taken by accident or suicidal intent there is burning pain in the mouth, œsophagus and stomach, followed by a feeling of faintness and intense intoxication. The face is pale and covered by clammy perspiration. Pupils contracted and pulse rapid and intermittant, and often there is vomiting of a frothy mucus. These symptoms are quickly followed by coma and collapse. In some persons violent convulsions precede the final collapse. The urine is frequently suppressed, but if drawn off with the catheter is dark colored and smoky.

When we remember that carbolic acid is one of the most rapidly fatal of poisons, its action being almost as rapid as hydrocyanic acid, it is evident that we should learn to think and act quickly when called to a case of poisoning by it. A few drops have caused alarming symptoms and one ounce death in ten minutes.

There is no time to be lost in consulting pocket manuals and sending for our professional friends to help us out of the difficulty. It is the duty of every medical man to familiarize himself with all the substances which have been shown to possess any antidotal power. Three agents of undoubted worth are *milk*, *vinegar* and *coffee*. One or all of these are likely to be found in any household, no matter how lowly, and should be made use of until more efficient means can be brought to bear. The *British Medical Journal* of 1897, Volume 2, records the case of a girl, aged 18, who took carbolic acid with suicidal intent. The stomach was washed out with vinegar and water, equal parts, followed with six pints of warm water. Five ounces of milk and one of brandy was afterwards introduced and left in the stomach. The girl recovered.

Hansberger cites a case in the *Medical Brief*, 1900, Volume 28, of a boy, age 16, who drank one and one-half ounces of acid. He was seen thirty minutes later. One pint of cream was at once put into the stomach and stomach kneaded to mix the two. Dry heat and friction were used, and within two hours the boy regained consciousness. He also states that one-half ounce of carbolic acid mixed with milk or cream can be taken into the stomach without causing any symptoms, showing the undoubted antidotal properties of milk and cream.

Until 1872 or 1873 no known antidote to carbolic acid was known. Then Huseman advocated the *saccharate of lime*. Bauman, Herter,

Sonnenberg and Cerna claimed that the *non-poisonous sulphates* possessed undoubted antidotal properties. It has been shown that they are valuable antidotes. *Epsom* or *Glauber's salts* in solution readily follow the acid into the circulation and combine with it, forming the sulpho-carbolates. A drawback to their use is a knowledge of the fact that this reaction is somewhat slow in taking place, and valuable time thereby lost in waiting for them to exert their antidotal properties.

The weight of evidence in late years goes to show that in *alcohol* and *atropin* we possess our two most valuable antidotes. The results obtained from their use, especially alcohol, scarcely admit of a doubt of their efficacy.

As the toxic effect of carbolic acid is exerted principally upon the respiratory center, in atropin we possess the most valuable agent for antagonizing this action. If a case is seen soon enough the stomach tube can be used. If considerable time has elapsed this procedure is of doubtful benefit, as enough of the poison has become absorbed to cause death. It is a matter of opinion as to whether the alcohol be used diluted or undiluted with water. Herman A. Klein reports a case in the *Journal of the American Medical Association* for 1900, Volume 35, of a woman, age 29, who drank two ounces of the poison. Four ounces of undiluted alcohol was given every half hour, until three doses were taken; then one ounce every hour until three had been taken. The patient was well in six days.

In Allbutt's *System of Medicine* it is recommended that the alcohol be used diluted with equal parts of water.

The following case, though it did not occur in my own practice, I take pleasure in bringing to the notice of the Society, as I consider the treatment and general management all to be desired:

A married woman of about 35 years of age, mother of two children, drank half a fluid ounce of phenol, diluted probably with water, at 10:30 at night. Her husband at once recognized the odor of carbolic acid on her breath and realized that she had swallowed the same to destroy her life, from her actions and words. He hastened for medical aid, and twenty minutes later the wife was found lying supine upon the floor in the deepest coma. The respirations were accelerated, the pulse weak and rapid, the skin pale, the mucous membranes

bluish red, the eyelids half open, the pupils contracted, cutaneous and mucous reflexes completely abolished. The patient was treated by Drs. Masterson and Kolipinski, who later on had the aid of Dr. Kemp.

The measures adopted to oppose approaching death were the following:

1. Atropine sulphate subcutaneously 1-50 gr.
2. Through the stomach tube: (a) Six fluid ounces diluted alcohol; (b) stomach irrigated with over two gallons of water at the ordinary temperature; (c) six fluid ounces of undiluted alcohol, washed out in about five minutes; (d) a tablespoonful of Epsom salts in a pint of water; (e) stomach filled to repletion with very strong hot coffee, this syphoned off; viscus re-filled and allowed to remain so.
3. Nitroglycerine hypodermically, 1-100 gr.
4. Hypodermic injection atropine, 1-50 gr.
5. Rectal enema of salt solution.
6. Salt solution injected under breast and side of chest.

The urine, twice drawn, was of an olive or greenish yellow color and smelt strongly of carbolic acid. Three hours were spent in the work stated. The nasal and faucial reflexes became faintly apparent. Soon she showed a transitory return to consciousness, when her name was shouted in her ear. The woman made a speedy recovery.

1021 *Eleventh street, N. W.*

UNDETERMINED ABDOMINAL CYST CONTAINING PUS, FOLLOWED BY JAUNDICE, BILIARY FISTULA—OPERATION—RECOVERY.*

By W. W. RANGELY, M. D., Christiansburg, Va.

I was called to see Mrs. P., September 1, 1902. She was 32 years of age and mother of four children. I found her suffering intense abdominal pain. Tongue was coated; temperature 101° F. She was vomiting, and her abdomen was distended and very sore. She was poorly nourished and very much emaciated. The presence of the tumor, the character of the pain and the fever led to the diagnosis of pus in the tumor. Upon examination the next day I found that the mass which had occupied the re-

gion of the right ovary was now on a level with the umbilicus.

The patient was prepared for operation and an incision was made in the middle line of the abdomen. When the peritoneum was opened the mass forced itself into the opening. It was about the size of a kidney, and, in fact, very much resembled a kidney. The mass was attached to the liver by a pedicle. I opened the cyst and found that it contained about half pint of pus, which was very offensive. I attached the sac to the abdominal opening for the purpose of drainage and applied my dressings.

On the third day I went back to dress the wound, and, to my astonishment, found the patient as yellow as ochre from her head to her feet. All the bile secreted had apparently escaped through the abdominal wound. Her bowel discharges were chalky or putty-white in color. This state of affairs continued for two weeks. But after this the fecal discharges became natural in color and the wound healed normally and rapidly. The patient made an uneventful recovery, and she is now stout and well.

The operation was done in a small room at the patient's home. I used every aseptic precaution possible under the circumstances. She did not have so much as a stitch abscess after the operation.

This was evidently a case of undetermined cyst containing pus, followed by biliary fistula.

RUPTURE OF CAROTID ARTERY—SUCCESSFULLY LIGATED.*

By R. J. PRESTON, M. D., Marion, Va.,

Superintendent Southwestern State Hospital, Ex-President Medical Society of Virginia, etc.

Case No. 2076. J. W. E., aged 47. Admitted to Southwestern Hospital July 23, 1902, 11 P. M. Occupation, farmer; married; has several children; has led a dissipated life.

First symptoms of melancholia about one month before; grave mental depression about welfare of his family, financial condition, etc., gradually increasing, until July 18th he wandered from home, and, with a sharp knife, cut his throat. Was not found for twenty-four hours.

* Reported during session Southwestern [Va.] Medical Society, held at Pulaski, Va., April 1, 1903.

* Read before the Southwestern Medical Society, Pulaski, Va., April 1, 1903.

On admission the wound was in a very bad condition, cut being about five inches long—extending from point under mastoid process to near median line in front—exposing trachea, carotid vessels, etc.; terribly infected, pus filling wound. The stitches put in five days previously were all broken loose. Temporary dressings were applied by Dr. King after cleaning and disinfecting wound, and patient put to bed.

July 24th—Morning. Wound was opened and after thorough disinfection, Dr. King and I were proceeding to dress and permanently close it when a slight erosion, or scratch, was noticed on the sheath of the blood vessels, which seemed somewhat infiltrated, as were other tissues, with pus—color, dull yellow. We were startled by the spouting of blood from this point in a small thread-like stream at first, but in a second or two increasing to the size of a little finger, apparently, spattering the blood against the white wall almost five feet distant. Dr. King exclaimed, "He's gone." "Grasp the artery," said I, which he did. The patient mean while made desperate lunges, and attempted to tear open the wound and complete his suicidal purpose. While Dr. King held the blood vessels I ran to the office for suitable instruments, etc. I at once threw a ligature around the entire sheath below and above the rupture. This checked the flow of blood, except a slight oozing, which was stopped by another ligature below. The wound was disinfected and packed with antiseptic gauze. The patient being thoroughly secured was kept as quiet as practicable, though we were hourly expecting a further rupture of the vessels.

July 25th—Morning. The dressing was removed by Dr. Priddy, the wound again thoroughly cleansed and disinfected, several little pus sacs opened and cleansed and the tissues stitched together and partly closed, drainage tube being left in and disinfecting washes regularly applied several times daily. The patient's arms were kept in restraint and an attendant kept by his bedside continually for five days and nights. There was considerable elevation of temperature (102° to 103°) at times, and frequent pulse, until July 30th, when temperature and pulse became about normal. Liquid food was administered freely and strychnine given every four hours.

On August 4th the patient was less melancholic, manifested some desire for food and

slept well. On August 6th he sat up in bed, was quite cheerful and expressed a desire to get well and go home. The wound was now about healed. Tonics and nourishing food were kept up and his improvement continued, mentally and physically, for some weeks, the patient going about the ward in his rolling chair.

About September 16th he began to show some mental depression, loss of appetite, which gradually increased, becoming more and more melancholy, wanting to die, etc. These symptoms increased with loss of power, mental and physical, until October 5th, when, from an apparent apoplectic stroke, he fell from his chair helpless, and died in a few hours.

Being absent from the hospital, a hurried post-mortem of the brain was made on the same day by Drs. Priddy and King, who found a large abscess at the base of the brain—cerebellum—containing several ounces of pus, besides a softened condition of the entire base of the brain.

This man was desperately suicidal. His case was despaired of at first, but after a few weeks we had great hopes of recovery until the untoward symptoms set in.

Could this abscess of the brain have been caused by, or was it dependent in any way upon, the ligation of the carotid vessels? Or was it more likely present in the earlier stage of his melancholia, and causative, or contributory thereto?

In the sudden emergency coming upon us in the rupture of the carotid artery, the ligatures were thrown around the entire sheath of the vessels, undoubtedly including the carotid artery, the internal jugular vein and the pneumogastric nerve. The better surgery would have been at the time, as afterwards, to have ligated the artery separately, and the vein, if necessary, but no time was at our disposal, as a fatal issue seemed at the time unavoidable.

Little or no disturbance of respiration was observed, as we expected, because of including the pneumogastric nerve, and but little disturbance of circulation, except as caused by the great loss of blood.

Why is a caller like a lover? Because he comes to adore.

Book Notices.

Manual of Practical Hygiene. By CHARLES HARRINGTON, M. D., Assistant Professor of Hygiene in Medical School of Harvard University. *Second Edition. Revised and Enlarged. Illustrated with 12 Plates in Colors and Monochrome, and 113 Engravings.* Lea Brothers & Co., Philadelphia and New York. Cloth. 8vo. Pp. 760. Price, \$4.25 net.

This magnificent work, good alike "for students, physicians and medical officers," is about as well up to date as a text book can be expected. With the elimination of obsolete quarantine laws and careful pruning the present book is about forty pages larger than the first edition, containing a chapter on the relation of insects to human diseases, and the addition on numerous pages of new and rewritten matter. Chapter I contains over 200 pages on foods. Successive chapters are on air, the soil, water, habitations, schools, etc.; disposal of sewerage, garbage, disinfectants, etc.; military, naval and marine hygiene, tropical hygiene; relation of insects to human diseases, hygiene of occupation, vital statistics, personal hygiene; vaccination and other preventive inoculations; quarantine; disposal of the dead. Under each caption the subjects are studied in detail and facts are given of everyday utility. No authority is more eminent; no teaching plainer and the lessons are all such as should be familiar to the doctor and the sanitarian. "Within the field of preventive medicine lie the greatest possibilities for future success in the reduction of disease prevalence."

Progressive Medicine. Edited by HOBART AMORY HARE, M. D., Professor of Therapeutics, etc., Jefferson Medical College, etc., Assisted by H. R. M. LANDIS, M. D., Assistant Physician to Out-Patient Department of Jefferson Medical College Hospital Dispensary, etc. Vol. I, March, 1903. Lea Bros. & Co., Philadelphia and New York. 1903. Cloth. 8vo. Pp. 450.

This first volume of 1903 of the "Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences" is taken up with surgery of the head, neck and chest; infectious diseases, including acute rheumatism, croupous pneumonia and influenza; diseases of children; pathology; laryngology and rhinology; otology. While each of the sections is full of valuable information, well

compiled and well arranged, those on the surgery of the head, infectious diseases and diseases of children will be the most serviceable to the general run of our readers. The dozen or so pages given to malaria will be found of special interest to our southern physicians especially. But the pages in which the most marked advances are noticed are those of the chapter on pathology, dealing in great part with cytotoxins, agglutinins and precipitins. But it would be hard to say which sections are of most value. It depends upon the immediate wants of the practitioner. A good index helps him to find what is to be found in each volume.

Compend of Diseases of Children. By MARCUS P. HATFIELD, A. M., M. D., Emeritus Professor of Diseases of Children, N. W. U. Medical School, etc. *Third Edition, Thoroughly Revised. With a Colored Plate.* Philadelphia: P. Blakiston's Son & Co. 1903. Cloth. 12mo. Pp. 241. Price, 80 cents net.

This, No. 14 of Blakiston's Series of "Quiz-Compends," is especially adapted "for the use of medical students." It needs but an examination to convince any one of its excellent arrangements and merit for the purpose indicated. It serves also as a useful guide book for the practitioner who hastily wishes to review the salient points of a subject connected with the diseases of children. In fact, there is not a great deal more of real substance in the larger text books than is to be found in this *Compend*. Now that State Boards of Medical Examiners are in almost every State, this *Compend* will serve a valuable purpose with those who wish to review pediatrics.

Care and Feeding of Children. By L. EMMETT HOLT, M. D., LL. D., Professor of Diseases of Children in College of Physicians and Surgeons, New York. *Third Edition, Revised and Enlarged.* New York and London. 1903. Cloth. 12mo. Pp. 149. Price, 50 cents.

This book is prepared in the form of a "catechism for the use of mothers and children's nurses," the first edition of which was published in 1894. Since then the section upon infant feeding has needed so much new material that it has been rewritten, especially as relates to the selection of cow's milk and its preparation and use in infant feeding. We regret that this useful book has not an index, but the systematic arrangement of subjects considered makes it easy to find the point one wishes to inquire

about. This "catechism" is first rate help to nurses and to mothers who have to provide for their children. The cost is so moderate that it would pay doctors to make a present of the book to deserving mothers and nurses.

International Medical Annual. A Year Book of Treatment and Practitioners' Index. 1903. New York: E. B. Treat & Co. Price, \$3. Cloth. Small 8vo. Pp. 739.

It is proof of the demand of this work when reminded that this volume completes the twenty-first year of publication. Its pages are not simply compilations, but most of the sections are well edited. This 1903 volume begins a general summary of the past year's advances, etc., so that the reader may get an idea of them in a small compass. So far as subjects are concerned, they are arranged alphabetically. Such a book as this cannot be reviewed. It can only be commended to the every-day practitioner, because it covers almost every subject written about during the past year. Special space is given to the X-ray treatment of diseases and to the description of the essentials of a good X-ray machine, how to use, etc. But we were disappointed at not finding fuller reference to the value of X-ray treatment in such conditions as progressive locomotor ataxia, etc., for this heretofore progressive, if not incurable, disease seems now to have a remedy in X-ray that surpasses the value of all other agents.

Text Book of Practical Medicine. By WILLIAM GILMAN THOMPSON, M. D., Professor of Medicine in Cornell University Medical College, New York, etc. *Second Edition. Revised and Enlarged. Illustrated with 62 Engravings.* Lea Brothers & Co., New York and Philadelphia. 1902. 8vo. Pp. 1,014. Cloth, \$5; leather, \$6; half Morocco, \$6.50.

This is a splendid text book for the practitioner and college student alike. Accustomed to teaching, the author has written succinctly and yet clearly on every subject that is usually found in a standard work on the practice of medicine. In view of the progress made in the etiology and prevention since the first edition in 1900, as to dysentery, yellow fever and malaria especially, the articles on these diseases have been rewritten. The sections on immunization, preventive inoculation and sero-therapy of the infective diseases are brought up to date. The various functional disorders have received fuller attention than in the former edition of

this work. Some of the sections on diseases of the blood and of the heart have been rewritten so as to eliminate all ambiguity; and much new material has been incorporated in the chapters dealing with diseases of the digestive system. In short, while only a few pages have been added to the bulk of the volume, the use of new type and the careful revision of the first edition have enabled the author to bring many facts into the text without the cutting out of anything that is of importance. If any criticism is to be made it refers almost entirely to the index. For instance, simple continued fever, as distinct from ephemeral fever, typhoid fever, etc., is indexed under the title *febricula*, and not under the word "fever." But it is only with reference to such minor points that any critical remark can be made, unless, of course, one enters upon a discussion of debatable statements. As issued, this "Text Book of Practical Medicine" must be recognized as standard authority, and one well worthy of adoption in the class-room as also by the older doctor.

Surgery of the Head. By BAYARD HOLMES, B. S., M. D., Professor of Surgery in University of Illinois, etc. New York: D. Appleton & Co. 1903. Cloth, Small 8vo. Pp. 569.

There is nothing in the advertisement of this book to indicate that such is the case; but in the preface we note that the author states that it has been "difficult to select a title for *this series*, indicating that this is only one of several volumes to satisfy the title "Surgical Emergencies." We are told that "*the books* will contain a full discussion of all those emergencies which the average practitioner of medicine meets in his daily practice; but those unusual and trying conditions which the professional surgeon would understand by the title are passed over briefly." In the preparation of "this series of books on the every-day surgery of the human body" we are told by the author that "three distinct kinds of subjects have secured attention—those conditions which are most frequently met with; those that are less frequently met with, but require instant relief, and those that are of great theoretical importance, though of less frequency." The volume before us, we are told, omits the surgery of the eye, the ear, the nose, the throat and other well recognized specialties. And yet quite an exhaustive chapter on otitis media—covering forty-two pages—appears in the work. The conversant know-

ledge of the author as to the wants of the profession in publishing this book is manifest. He does not hold himself down to any tight and fixed system of arranging subjects; and yet each page of description and of recommendation is full of information, based on a fruitful life of experience and observation. Most of the chapters conclude with a set of "maxims" that seem deducible from what has been said, and these summaries, as it were, of each chapter are so tersely stated as to be remembered, and must prove serviceable to the general practitioner, especially when called upon in an emergency. A good index is appended to the book—which we suggest should be in the hands of all doctors in active practice.

Editorial.

State Examining Board for Trained Nurses.

A bill has just passed both branches of the Virginia Legislature providing for the creation of an Examining Board for Trained Nurses, to be composed of five members, to be appointed by the Governor from twelve nominations submitted to him by the Virginia State Association of Graduate Nurses. Any nurse who graduates prior to January 1, 1904, is exempted by a provision of the bill from examination. It now goes to the State's Chief Executive for his signature. One section of the proposed new law reads: "This act shall not be construed to affect, or apply to, the gratuitous nursing of the sick by friends or members of the family; and also it shall not apply to any person nursing the sick for hire, but who does not in any way assume to be a registered or graduate nurse."

An Injunction Restraining the Quarantine Officer of Newport News, Va.,

From entering upon his duties at said port has been granted to Dr. S. W. Hobson until the second Monday in May. Mean while the case will be heard in court, and the injunction will either be dissolved or made permanent. It seems that Dr. Hobson has served as quarantine officer for the past two terms, and under the old law his present term expires May 1, 1903. Governor Montague recently appointed Dr. W.

F. Creasy to succeed Dr. Hobson on May 1st. The incumbent claims, however, that the new Constitution provides that all State officers shall hold over until January 1, 1904, and the injunction is asked for so as to have the question decided by court as to whether or not he is to hold office until that time.

The Association of Military Surgeons of the United States

Will hold their twelfth annual session at Boston, Mass., on the 19th, 20th and 21st of May, 1903. On the 30th of January, 1903, the President of the United States approved an act, which passed Congress, incorporating the association and extending to it official recognition by the government of the United States. By this act the three cabinet officers and the three bureau chiefs whose duties bring them most closely in contact with the work of the association, were made, with the president of the association, a permanent Advisory Board—a provision which adds greatly to the strength and weight of the association.

The membership consists of two classes, *active* and *associate*. The rights and privileges of both are identical, except that the latter do not hold office or vote at the annual meetings. The admission fee for either class is \$3, and this includes annual dues for the current year. The annual dues thereafter are the same. *The Journal of the Association of Military Surgeons of the United States* is the official organ, and is mailed free to each member. Active membership is open to commissioned medical officers and contract or acting assistant surgeons of the United States army, navy, Public Health and Marine Hospital Service, the militia, national guard and United States volunteers. Associate membership is open to ex-medical officers of the foregoing services, ex-medical officers of the Confederate services and medical officers of foreign countries.

Increase in Medical Corps United States Navy.

The following items, as furnished by the surgeon-general of the navy, will be of interest to those who contemplate applying for position in the medical corps of the United States navy:

The last Congress provided for an increase of 150 members in this branch of service, twenty-five of whom are to be appointed each calendar year for six years. The number of

vacancies occurring from retirements, resignations and casualties average about ten a year in addition to the twenty-five created by new legislation, thus making the total number of appointments necessary about thirty-five yearly. These appointments are open to any well-qualified physician between the ages of 21 and 30, who is a citizen of the United States. Examinations to determine the fitness of candidates are held by boards, which are in continuous session throughout the year at Washington, D. C., and Mare Island, California. Candidates should apply to the Secretary of the Navy for permission to be examined. No political or other influence is required, and the only testimonials needed are those bearing on moral standing and citizenship. The examinations are physical, professional and collateral.

The prospects of the medical officer of the navy, both for promotion and professional opportunity, are very bright, and the plan of enlargement of the naval establishment already adopted and authorized, as well as that in contemplation, gives assurance that this outlook will grow even more promising.

Appointments are first made to the grade of assistant surgeon (rank of lieutenant, junior grade), who, after three years' service as such, is eligible for promotion to the next higher grade—that of passed assistant surgeon—and these promotions continue at the end of five, ten and fifteen years in the service through the various other grades of surgeon, medical inspector and medical director. Pay varies from \$1,402.50 on shore (\$1,650 at sea) and \$288 allowance per annum when quarters are not furnished by the government, for the assistant surgeon, to \$3,825 on shore (\$4,500 at sea) and \$720 allowance, etc., for the medical director (rank of captain). Eight cents a mile is the allowance when travelling under orders. The surgeon-general, ranking as a rear-admiral, receives \$5,500 yearly, plus an allowance of \$720.

The professional opportunities afforded the officers of the medical corps are very good, and are constantly improving. The first assignment to duty is usually to one of the fourteen naval hospitals, where he remains until the opening of the Naval Medical School in Washington, early in October. The Medical School is a post-graduate school, designed to fit the officer for the intelligent application of his professional knowledge to the requirements of the

naval service and to give him a training in certain specialties peculiarly important to naval work. Five months are devoted to this school work, and after its completion the assistant surgeon is assigned to sea duty. He is provided with the latest and best instruments of precision and operation, and is given every encouragement to perfect himself in the practice of his profession. The most recently constructed battleships and large cruisers are equipped with hospital facilities equal to those found in most of our best organized small cities. Other duties to which naval medical officers are assigned are those pertaining to the needs of navy yards, naval stations, receiving ships and recruiting work. Opportunity frequently occurs also for attendance of medical officers upon the meetings of medical and other scientific societies both at home and abroad as the accredited representatives of the Navy Department and the government.

The Texas Sanitarium for Consumptives

Is to be established at Llamo. It is the intention of the incorporators to make this a first-class institution in every respect and to give first-class service. The climate is ideal for the treatment of incipient tuberculosis. Drs. J. T. Wilson, of Sherman; J. W. McLaughlin, of Galveston; Ralph Steiner, T. J. Bennett and M. M. Smith, of Austin, constitute the Board of Directors for the first year. Under such directors we have no hesitation in recommending this sanitarium.

Comstock Collecting Agency, of Oswego, N. Y.

A correspondent asks: "Can you, or any of the subscribers of the *Virginia Medical Semi-Monthly*, give any information concerning the Comstock Collecting Agency, of Oswego, N. Y.? Information from Oswego and other places is not very satisfactory." Dr. H. B. M., does the profession good service in asking the question. We know nothing of the company.

No Bureau of Vital Statistics for Texas.

The *Texas Med. Jour.*, April, 1903, says: "It has long been a reproach to Texas that she takes no account of her population, though she does of her pigs; and that there is no record from which it could be shown in court that any decedent had ever been born, or if so, that he was legitimate, or that he ever died. It has

been a matter of surprise and disappointment to the State Association of Physicians that all their efforts in the past to secure legislation to provide this very necessary measure should have failed."

Chase City Mineral Water Company.

On April 16th a number of the profession of Virginia and North Carolina, especially, were tendered a special reception by this company, special trains being provided from Richmond, etc. The new hotel, "The Mecklenburg," has just been completed, and is a thoroughly modern sanitarium hotel, with every equipment suited to such an institution—with hot and cold water, steam and electric baths, etc. The waters are lithia and calcium chloride, the lithia springs being evidently of the same vein that supplies the famous Buffalo lithia water, some ten miles distant. Every precaution is taken to keep the two wells supplying these waters free from any contamination, being conducted by suitable pipes to the bottling house, the surroundings and arrangement of which are perfect. Dr. J. C. Walton, formerly of Reidsville, N. C., is the able and genial physician in charge, with a corps of assistants thoroughly trained in the administration of baths, massage, etc. Every room of the hotel—capable of accommodating about 200—is an "outside room," and most of them have their own private toilet and bath-rooms. When it is known that the hotel is under the same general management as "The Jefferson," of Richmond, Va., the visitor may be sure of the best of accommodations and attentions, while those in need of the use of the baths, medical service, etc., are likewise assured of every arrangement for their treatment and comfort. The trip, going and returning by way of the Southern railway to Keysville and thence to Chase City, and the sumptuous entertainment of the doctors while at "The Mecklenburg," will long be treasured in memory as a pleasurable and profitable outing.

Portrait of Dr. Hunter McGuire.

During the general meeting of the American Medical Association, in session at New Orleans, May 6th, Dr. W. L. Rodman, of Philadelphia, Pa., presented to that body for installation in its Hall of Fame a portrait of the late Dr. Hunter McGuire, of Richmond, Va. The eminence of Dr. McGuire being recognized by the

members of the association present, Dr. Rodman's eulogy was greeted with uproarious applause. Such demonstrations of esteem of Virginia's greatest surgeon are exceedingly pleasurable to the friends of the lamented surgeon.

The University College of Medicine, Richmond, Va.,

Will hold its commencement exercises at 8 P. M., Thursday, May 14th, at the Academy of Music, this city. The speaker of the occasion to the graduating classes in medicine, dentistry and pharmacy will be the Hon. Don P. Halsey, of Lynchburg, Va. A reception will be tendered the graduates at the Westmoreland Club after the exercises at the Academy of Music. The Alumni Association will hold its meetings on Wednesday and Thursday, May 13th and 14th.

Valentine's Meat Juice for Ulcers of Legs, Etc.

The clinical experience brought forward to show the wonderful effects of the applications of Valentine's Meat Juice to such conditions as ulcer of the leg, etc., is positive and worthy of further investigation. For instance, Dr. E. C. Leonard, M. R. C. S., of Bristol, England, used the meat juice diluted as a dressing to a large, unhealthy ulcer of the leg which would not heal, but under this treatment the ulcer rapidly healed. Dr. Fred. C. Cory, of Bournemouth, England, has made like novel use of this meat juice for the rapid healing of ulcers of the leg, especially of old sores. In fact, he adds that "when mixed as a lotion there is nothing to beat it." Dr. Collier L. Bower, of Philadelphia, Pa., applies the preparation on lint or absorbent cotton to the sores of chronic ulcer of the leg with excellent results. Dr. W. E. Colegrove, of Horsehead, N. Y., applies the meat juice to indolent ulcers and erysipelatous surfaces "with beautiful, soothing and healing results." Dr. W. Alfred Porter, of Woodford's, Maine, applied a mixture of half an ounce of iodoform and one ounce of Valentine's Meat Juice, as a poultice to a case of ulcer of the leg, changed every six hours; the ulcer healed, without any sloughing, and left healthy tissue. Such accumulated experiences with reference to the healing of chronic, indolent ulcers of the leg simply by the application of Valentine's Meat Juice warrants further trials of the preparation in similar conditions, with report of the results.

Dr. Hugh Nicholson, Charleston, W. Va.,

Married Miss Roberta Coleman, of the same city, April 16th. Dr. Nicholson, until about a year ago, was resident physician at the Sheltering Arms, Paint Creek, W. Va. Since he has been in Charleston, has placed himself in the foremost rank of the profession.

Dr. Christopher Tompkins, Richmond, Va.,

Has been elected president, it is said for the fourth time, of Southern Medical College Association during its session at New Orleans. The session next year will be at Birmingham, Ala. *Dr. G. C. Savage*, Nashville, Tenn., was re-elected secretary-treasurer.

The Medical Examining Board of Virginia

Will hold its first session for 1903 in Richmond, Va., June 22-25, 1903. See advertisement on fourth cover page of this issue.

The Sarah Leigh Hospital, of Norfolk, Va.,

Is described as in every respect a fully up-to-date institution in its structure and equipments. It is the private hospital of Dr. Southgate Leigh, of that city, whose extensive practice demanded an institution of this kind to accommodate his patrons. His success as a surgeon and practitioner is well known throughout this entire section of the country. We congratulate the people of Norfolk in having in their midst such a model institution.

Obituary Record.

Dr. Sheldon Stringer,

Of Brooksville, Fla., died April 6, 1903, in the 68th year of his age. Born in North Carolina, he moved in early boyhood with his parents to Florida, where for nearly half a century he practiced in his chosen profession, healing the sick, administering to them in their sufferings and carrying good cheer wherever he went. He graduated in medicine in the Medical Department of Tulane University with the class of 1859. During the civil war he was surgeon-general of the Florida State troops, and

rendered splendid service in that capacity. He was regarded as a leader in the medical profession of his State, and was at one time president of the Florida Medical Association. In 1881 he was a member of the Legislature. Dr. Stringer was one of the most prominent and valued citizens of his community, and the good he did to his fellow-man as a citizen and as a physician will long be remembered by those who knew him.

Dr. Henry D. Kerfoot

Died at home, at Berryville, Va., April 10, 1903, after a protracted illness of a complication of diseases. He was 57 years old, and was formerly a Fellow of the Medical Society of Virginia. He served with distinction with Col. John S. Mosby in the Confederate service. He leaves a widow, seven sons and three sisters.

Dr. Henry Grey Latham

Died at his home, at Lynchburg, Va., May 5, 1903, aged 72 years. He graduated in medicine from the University of Virginia, 1851, and was in practice in his Hill City home with his father (the late Dr. Henry Latham, a distinguished practitioner of his day, who was a charter member and the president of the Medical Society of Virginia, 1879-'80) until the civil war, when he entered the artillery service of the Confederacy. Afterwards, because of disabilities in the field, he was transferred to the medical department. After the war he resumed practice of medicine, joined the Medical Society of Virginia 1871, was its president 1891-'92, and in all that pertained to the success of the society he was ever prominent. He was a member of the Medical Examining Board of Virginia from its organization until about eight years ago, having been its president from 1890 till his resignation. Few men in this State were better known. Possessed of a sympathetic nature, he was a friend of him who needed a friend—brave in defence of the good and generous to the needy. Socially, he was the central figure of every occasion that opportunity permitted him to enjoy—full of wit and humor, and yet brimful of that nature that caused the distresses of his friends to be his distress. He was honored by the profession, loved by his patrons and long will live in the hearts and memories of all who knew him.

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Original Communications.

THE TUBERCULIN TEST IN THE DIAGNOSIS OF TUBERCULOSIS IN MAN.*

By BOYD CORNICK, M. D., San Angelo, Texas.

Time was, and not so very long ago, when pulmonary tuberculosis and pulmonary consumption or phthisis were synonymous terms used indifferently and without discriminating the stage of the pathologic process. The treatment was empirical or purely symptomatic. The prognosis was essentially unfavorable, and there seemed to be no particular reason for differentiating between the early and more advanced stage of a practically hopeless disease. Of late years, however, it is coming to be an accepted teaching by those of widest experience that no other chronic disease is so readily curable as tuberculosis if taken in the earlier stages, before the body tissues are too widely invaded, and before a mixed infection with various other pathogenic germs has been superimposed upon tuberculosis pure and simple. If this doctrine, after making due allowance for the possible over-enthusiasm of its advocates, be accepted as only half true, then the recognition of a tuberculous infection at the earliest practicable moment stands out as a matter of pre-eminent—nay, of vital—importance to the individual. At this early period of the infection not only may the best available therapeutic measures be adopted for the cure of the patient—measures hygienic, dietetic, climatic, and, if you will, specific—but at the same time that curative measures are instituted for the welfare of the individual, the proverbial ounce of prevention, which is of even more importance to society at large, may at an effective period have its due weight and multiplied value.

Before the illuminating genius of Robert

Koch had identified under the microscope the bacillus tuberculosis as the efficient and sole exciting cause of tuberculous processes, the whole subject was shrouded in a haze of uncertainty and doubt. Laboratory cultures and animal inoculation verified his claim that tuberculosis was a germ disease, and, therefore, infectious. The deduction followed logically, of course, that being infectious it was also preventable. The microscopic recognition of a bacterium as the exciting cause of tuberculosis at once clarified our diagnostic vision in the recognition of its manifold manifestations and broadened our views as to the nature of many theretofore doubtful pathologic processes. But in the diagnosis of bone and joint tuberculosis, of glandular and cutaneous involvements, the surgical removal of affected tissues must often be resorted to before the microscope becomes an available diagnostic means; while in suspected pulmonary tuberculosis if we wait till ulceration and breaking down of tissues shall liberate the bacilli in order to make a certain diagnosis, we may have missed the golden opportunity and find that we can no longer take the therapeutic stitch in time. Hence it must be admitted without further question that the finding of tubercle bacilli in the sputum with the microscope may never rightly be called an early stage diagnosis, though as a check on other diagnostic measures it should never be omitted.

On August 4, 1890, eight years after his memorable discovery of the tubercle bacillus, Koch stated at a general meeting of the International Medical Congress at Berlin, that he had, as a result of prolonged research, found a substance which, when inoculated into a guinea pig, renders it incapable of reacting to the inoculation of the tubercular virus. (*Diseases of the Lungs, Fowler and Godlee*, p. 396.) In other words, this substance produced immunity to tuberculosis in guinea pigs. On November 13, 1890, Koch published the results observed

*Read before Section on State Medicine and Public Hygiene, Texas State Medical Association, San Antonio, Texas, May 1, 1903.

to follow the administration of this substance, both in tuberculous and non-tuberculous human beings. (*Deutsche Med. Wochenschr.*, No. 46 a.) It was asserted that the substance in question, for a time known as Koch's lymph, later known as tuberculin, possessed distinct curative properties in tuberculous processes in man, and that, quite aside from its therapeutic virtues, it developed, when administered subcutaneously to any tuberculous individual, a characteristic reaction, both general and local; and that this reaction of the tuberculin was diagnostic of the existence of a tuberculous infection. Koch's original tuberculin, also called crude tuberculin, is a sterilized glycerine extract made from pure cultures of human tubercle bacilli.

In the course of his experimentation Koch administered to himself what we now recognize as an enormous dose of tuberculin—250 milligrams—and suffered severe temporary discomfort in consequence. He reports the symptoms experienced in his own person as follows: "Three to four hours after the injection pains in the limbs, weakness, an inclination to cough, difficult breathing, which rapidly increased. In the fifth hour an exceptionally hard chill developed, which lasted nearly an hour; at the same time nausea, vomiting, rise of bodily temperature to 39.6° C. (103.3° F.); after about twelve hours all discomfort moderated, temperature declined and fell to normal by the following day. A heavy feeling in the limbs and weakness lasted for several days, and for the same period the site of the injection remained somewhat painful and red."

He reported, on the basis of numerous tests, that the smallest quantity of the substance which would produce appreciable symptoms in a healthy person was in the neighborhood of ten milligrams, equivalent to one cubic centimeter (or fifteen and a half minims) of the 1 per cent. dilution. Most non-tuberculous individuals reacted from this dose only with a slight aching in the limbs and evanescent weakness. Some, however, developed a slight rise of temperature also, up to 38° C. (100.4° F.) or a little higher.

Koch had found that healthy guinea pigs could tolerate a dose of 2,000 milligrams, and even more, of the undiluted tuberculin without being perceptibly affected thereby, while 250 milligrams produced in a healthy man a profound effect. So that, calculating by bodily weight, the 1-1500 part of the dose which produced no appreciable effect on the guinea pig

had a most profound effect on man. "But." to quote further from his report, "if a marked difference exists between experiment upon animal and man, with reference to the dosage of the substance when calculated by bodily weights, there appears on the other hand a marked similarity in certain other respects. The most important of these peculiarities is the specific action of the substance on tuberculous processes of whatever character they may be.

"I will not further describe here the results as to test animals, as that would lead me too far, but will turn at once to the very remarkable effects on tuberculous men.

"The healthy man, as we have seen, either does not react at all from a dose of ten milligrams, or does so in an insignificant manner. Exactly the same holds good for sick men also, as shown by numerous tests, provided they are not tuberculous. But an entirely different state of affairs develops with the tuberculous. The same dose of the remedy (ten milligrams) injected into these is followed by both a strong general and local reaction." At this point a foot-note states: "We have administered a tenth of this dose—namely, one milligram—to children of from 3 to 5 years, and to very delicate children only a half milligram, getting therefrom a pronounced, but not an alarming, reaction."

The general reaction consists in an attack of fever, which, usually beginning with a chill, raises the bodily temperature above 39° C. (102.2° F.) often to 40° C. (104° F.) and even as high as 41° C. (105.8° F.) At the same time occur pains in the limbs, inclination to cough, great weakness, often nausea and vomiting. "The onset begins, as a rule, four to five hours after the injection and continues twelve to fifteen hours. Exceptionally it can develop later, and runs its course then with lesser intensity. The sick are remarkably little depressed by the attack and feel relatively well so soon as it has subsided; indeed, as a rule, better than before."

It is worthy of mention at this point that the excessive febrile reactions reported in Koch's original paper as sometimes occurring are not necessary to establish the diagnosis, and should be avoided by beginning with a smaller dose than that at first recommended. A rise of 2° , usually reached in from twelve to twenty-four hours after the injection, is considered diagnostic. Arthur Latham holds that a rise of 1° F.

following the administration of one milligram may be considered a positive reaction, even when delayed under exceptional circumstances for thirty-six hours. (Latham, *Pulmonary Consumption*, p. 29.)

But let us return to Koch's original report: "The local reaction may better be observed in those patients whose tuberculous affection is visible to the eye; for example, in cases of lupus. In these cases changes take place which show the specific anti-tuberculous action of the remedy in a most astonishing way. Some hours after the injection has been made subcutaneously in the back, at a point quite remote, therefore, from the site of the involvement, whether it be of the skin of the face or elsewhere, and usually, too, before the chilliness commences, the lupus spots begin to swell and turn red. During the fever the swelling and redness continue to increase, and may finally reach so pronounced a stage that the lupus tissue becomes in some places brownish, red and necrotic. In cases of sharply defined lupus deposits, the strongly swollen and brown-red colored spot was often fenced in by a whitish ring of nearly a centimeter in breadth, which, in its turn, was surrounded by a broad and bright-red area. After decline of the fever, the swelling of the lupus patches gradually diminishes, so that after two or three days it may have vanished. The lupus nodules themselves are covered with a crust from exuding serum drying in the air; these transform themselves into scabs, which, after two or three weeks, fall off, and sometimes after only a single injection of the remedy, leave behind a smooth, red scar. Generally, however, several injections are necessary for the complete removal of the lupus tissues. But of that more anon.

"As being of special importance in this process emphasis must be laid on the fact that the changes described are limited strictly to the areas of skin involved by the lupus. Even the smallest and least evident nodules hidden in the scar tissue undergo this process and become visible by reason of the swelling and change of color, while the scar tissues proper, in which the lupus changes have run their course and entirely subsided, remains unaffected.

"The observation of a case of lupus treated with the remedy is so instructive, and must at the same time prove so convincing with regard to the specific nature of the remedy, that every one who wishes to practically investigate the

remedy should begin his tests, if it be at all possible, with cases of lupus.

"Less striking, but perceptible enough to eye and touch, are the local reactions in tuberculosis of the lymph glands, of the bones and joints, etc., in which cases swelling, increased pain, and, in superficial areas, redness also are observable. The reaction in the internal organs, on the other hand—for example, in the lungs—is withdrawn from our observation, unless one would refer a possibly increased cough and expectoration on the part of the pulmonary patient following the first injections to a local reaction. In such cases the general reaction predominates. Nevertheless, one must assume that here, too, like changes occur as those directly observed in lupus."

Supplementary to the foregoing quotations from Professor Koch's paper, I may add that a local reaction over a circumscribed area of the lungs is commonly recognized by careful auscultation as following the administration of a suitable quantity of tuberculin in cases of pulmonary tuberculosis, and, in the experience of capable clinicians, is conclusive as evidence of a local deposit, even when the general reaction following a small dose, when considered by itself, would be too slight for a positive determination of the matter.

But let us continue our translation, for in the next paragraph Koch states his convictions as to the *diagnostic value of his tuberculin* in the following clear-cut summary:

"In the tests thus far made the above described evidences of reaction have occurred without exception after the administration of ten milligrams whenever any character of tuberculous process was present in the body, and I believe, therefore, I am not going too far when I assume that the substance will prove an indispensable aid to diagnosis. By its help one will be in position to diagnosticate doubtful cases of beginning phthisis even at that stage when it is impossible to determine the nature of the ailment, either by finding bacilli or elastic fibers in the sputum or by physical examination. Glandular involvements, concealed bone tuberculosis, uncertain skin tuberculosis and such like affections will be easily and surely recognized as such. In cases of pulmonary and joint tuberculosis, which have apparently progressed to recovery, it will be practicable to establish whether the disease process has really terminated, or whether some scattered deposits

yet exist from which, like as a smouldering spark in a bed of ashes, the disease might later develop renewed activity."

Professor Koch then goes on to say: "Very much more important, however, than its diagnostic significance is its curative action"; but that is another story, which was not assigned me to-day, and would lead us too far from the subject in hand.

The method of administration of the tuberculin which Professor Koch adopted was by subcutaneous injection. It gave no results when administered by the stomach. The site selected for the needle puncture, after some trials of other localities, was the skin of the back between the shoulder blades, or in the loin, because the injection in these regions gave least local soreness, usually none, and was almost free from pain.

The composition of his remedy (which is a sterilized glycerine extract of a culture of human tubercle bacilli) and the mode of its preparation, was reserved for a later communication, since his work has not yet been completed, but in this first report he tells in detail how it looks and how to use it:

"The remedy consists of a brownish, clear fluid, which keeps without special precautions. For use this fluid must be more or less diluted, but the dilutions decompose if made with distilled water. To prevent this, the dilutions must be sterilized by heat and preserved under a seal of cotton, wool, or, what is more convenient, made with 0.5 per cent. solution of carbolic acid. Whether by repeated sterilization with heat or by the mixture with carbolic acid solution, the very dilute solutions appear to lose their strength after a time, and I have, therefore, always used solutions as freshly made as possible."

This seems a fitting place to clearly fix *the dosage* of the diluted tuberculin. The full limit of ten milligrams originally recommended for diagnostic use in adults may best be measured by one cubic centimeter (fifteen and a half minims) of a 1 per cent. solution, or one and a half minims of a 10 per cent. solution. The full dose of one milligram recommended for a child would, therefore, be one and a half minims of a 1 per cent. solution. Since Koch's original publication of his method of using the remedy for diagnostic purposes it has been extensively used by a number of clinicians, who, with a few exceptions, agree on certain modifications

of the dosage. For example, most of them recommend to begin with one to three milligrams to adults, and if no reaction occurs double the dose each day, or every other day, till twenty or thirty milligrams are given at a single dose. Others prefer to begin with five milligrams—selecting only those cases in which the diagnosis by other means cannot with certainty be made—and if no reaction follow, then double the dose once, and, if necessary, twice, before reaching a definite decision.

At the British Congress on Tuberculosis, held at London in July, 1901, Professor Koch is quoted (*Journal of Am. Assn.*, Aug. 10, 1901, p. 384) as saying that "the injections should be small enough; in weak patients one-tenth of a milligram was enough to begin with, and no second injection should be given until the temperature was again normal. When the first injection gave a faint reaction a second injection of the same quantity frequently, or, indeed generally, gave a very marked reaction."

As to the reliability of the tuberculin test, Koch's first report would indicate that he thought it practically infallible if the single test dose of ten milligrams were administered; but that there is nothing absolutely infallible in medicine we have all of us learned who have had even a brief experience. Koch is quoted ten years later by Karl von Ruch (*Journal of Tuberculosis*, July, 1900, p. 361), as having stated that to really exclude tuberculosis a patient must show no reaction to a full test dose of twenty milligrams. In July 1901, he stated at the British Congress (*loc. cit.*) that over 3,000 cases had come under his own observation, and from the study of these he had come to the conclusion that as a diagnostic test tuberculin was almost absolute.

It is a remarkable fact that while the general reaction is usually pronounced in incipient cases, which are febrile or only slightly febrile, it may be entirely absent following ordinary full test doses in cases of advanced phthisis, whether progressive or of the stationery fibroid type. This is accounted for on the hypothesis that such cases acquire a certain immunity by the absorption of like toxins from existing tuberculous deposits to those contained in the tuberculin. But in these chronic cases the diagnosis may usually be established by other means.

An observation of considerable importance has recently been made by Clement A. Penrose, of Baltimore, who reports (*Journal of Tuber-*

culosis, October, 1902), that tuberculin prepared from cultures of bovine bacilli produces a decidedly more pronounced febrile reaction in man than does Koch's original tuberculin, which was, and is yet, prepared from cultures of bacilli of human origin. It may be that the use of a bacillary product from bovine sources will in future eliminate an appreciable margin of error inherent in the tuberculin hitherto available.

Until recently the reliability of a febrile reaction following a test dose of tuberculin was assailed on the ground that syphilis and actinomycosis may afford a similar reaction to that met with in tuberculosis. But in such a case of actinomycosis of the liver, reacting to tuberculin, which occurred in the Leipsic surgical clinic, a tuberculous deposit in the lung was demonstrated *post mortem*. (Quoted by A. Frænkey in *Zeitschrift für Tuberculin u. Heilsettenwesen*, 1900, Bd. I.; from *Zeitschrift für Chirurgie*, 1896, Bd. XLIII.) It was asserted positively by Heron (*Proceedings London Conference, loc. cit.*) that he had never seen a reaction to tuberculin in a syphilitic patient not suffering from tuberculosis. Enslin (*Deutsch Med. Wochenschrift*, 1903, XXIX., 9, Abstr. *Journal Am. Med. Assn.*, April 4, 1903, p. 944) differentiates between tuberculous and syphilitic parenchymatous keratitis by the absence of a febrile reaction in syphilitic cases unless complicated by tuberculosis. It is worthy of note that the eight cases of associated tuberculosis and lues reported by Enslin gave a temperature reaction which was characterized by a steep rise and a steep decline. This occurred in two cases after .1 milligram of tuberculin; in five after injection of 1 milligram; in one after 3 milligrams.

The very wide experience obtained from the use of tuberculin in testing cattle for tuberculosis has demonstrated that in apparently healthy animals, if a definite reaction occur, there will be found somewhere in the carcass—in a lymphgland, perhaps, if the lungs and udder be found normal—a tuberculous deposit if only a sufficiently minute and careful examination be had. And in the human subject it is coming to be generally accepted that a definite reaction, following the administration of ten milligrams or less, is conclusive of the existence of tuberculosis. The margin of possible error appears to lie in the occasional failure of a tuberculous individual to afford a typical reaction to any

reasonable dose. Of such failure to react, in a case which later proved tuberculous, I have met with one definite instance.

As to the possibility of danger from the use of tuberculin for diagnostic purposes, the opinion of those who have used it most extensively—that it is safe when rationally administered in early stages of tuberculosis, when a diagnosis cannot be made with certainty by other means—should outweigh the fears of others, who either have not used it, or whose apprehensions are based on the harm which it unquestionably did when administered twelve years ago in excessive quantities, and to unsuited cases of phthisis with mixed infection as a therapeutic agent. Professor Strumpell (*Practice of Medicines*), while opposed to its use as a remedy for the treatment of tuberculosis, commends it, though somewhat guardedly, as a diagnostic agent; and Osler and Anders, on this side the Atlantic, both advocate it and rely upon it in the differentiation of otherwise doubtful cases. Like chloroform, strychnine and other powerful agents, its dosage must be carefully adjusted to the case in hand. Like Widal's reaction in typhoid fever, it may not be regarded as infallible, but in those cases, and at those stages of tuberculous involvement where other means of diagnosis fail us, we may rely upon tuberculin for an unequivocal diagnosis in from 93 to 98 per cent. of our cases.

SURGERY OF THE DIAPHRAGM.*

By B. MERRILL RICKETTS, Ph. B., M. D., Cincinnati, O.

Anatomy. Chief characteristic in mammals is in forming septum between thoracic and abdominal cavities. Absent or rudimentary in birds. Amphibians and lower animals are without it. First trace in ascent is in the crocodilians.

In mammals, it arises from the entire circumference of the thorax. Has four divisions—central tendineum, middle, right and left leaflet—and is composed principally of muscular tissue, lymphatic glands and ducts and a small amount of adipose tissue.

*Original abstract of a paper prepared as one of a series, two of which have appeared in this journal, for the Southern Surgical and Gynecological Association, February, 1903.

Blood supply is from right and left phrenic arteries, which arise, as a rule, independently from the aorta or cœliac artery. There may be one origin. Lymph vessels contain colored granules, but lymph glands do not.

Phrenic nerve supplies diaphragm; it arises from four, five and six cervical nerves. In man's diaphragm there is a sympathetic branch from the abdominal brain.

The diaphragm is supposed to play an important role in respiration.

Clauder, 1661, is perhaps the first to record his observations on the anatomy of the diaphragm. Louiche-Desfontaines, 1871, believed the diaphragm to be a respiratory organ. H. Luscha, 1857, records his observations on the anatomy and physiology of the diaphragm. J. D. O'Brien, 1891, contributes to this literature his original studies on the functions of the diaphragm as a rythmetical compressing muscle of the abdominal viscera, by virtue of which compression it becomes a most important and essential aid to nutrition.

Bertelli, 1894, describes the diaphragm in carnivora. A. Brachtet, 1895, records his researches in the development of the diaphragm in the rabbit. W. Jaworski, 1895, contributes his observations on diaphragmatic phenomenon and its clinical value. M. L. Patrizi, 1896, mentions the natural and artificial movements of the diaphragm. N. B. Gwyn, 1898, describes the diaphragmatic phenomenon, the so-called Litten's sign.

Anomalies of the diaphragm are common. The diaphragm may be absent in man, in part or in its entirety. It may have one or more fissures, varying in size, shape and location. The openings in the diaphragm may vary considerably as to location and size. De Galatigny, 1757, mentioned a case in which he observed a singular displacement of the diaphragm. Lawrence, 1852, noted a congenital deficiency of the muscular fibres in the left half of the diaphragm with displacement of the stomach and double pneumonia. Robinson, 1860, had a case of congenital deficiency of the diaphragm with malposition of the viscera. Van Gieson, 1871, reports a case of partial deficiency of the diaphragm in a still-born infant. Raven, 1878, reports his notes of a case of arrested development of the diaphragm. Polialon, 1881, records a case in which there was congenital absence of the diaphragm. De Schweinitz, 1888, reports a case in which there was an anomalous

arrangement of the right diaphragmatic leaflet. Fry, 1895, records a case of congenital defect of the diaphragm with combined diaphragmatic hernia.

Gangrene of diaphragm is rare, there being but three cases reported. It may be primary or secondary.

Neoplasms, benign or malignant, are infrequent.

The literature is exceedingly limited on lipoma, ossification, angioma, echinococcus, carcinoma, sarcoma, tuberculosis and abscess. These constitute about all of the pathologic conditions found in it.

Lacher, 1868, records a case of primary serous cyst of the diaphragm. Janeway, 1877, reports a case of abscess of the diaphragm and distention and rupture of the bile duct. E. S. Ricketts, 1897, had a case of subphrenic abscess, complicated with rupture into the pleural cavity. Operation, anterior and posterior drainage; recovery. B. Merrill Ricketts had two cases of subphrenic abscess from appendicitis. One (1898) recovered at the end of ten weeks by thorough drainage. The other died after several weeks (1894). Thomas, 1901, reports a subphrenic abscess with calcified walls discovered during convalescence from typhoid fever. Operated upon with recovery.

In 1901 B. Merrill Ricketts had a case of pulmonary abscess rupturing through the diaphragm, passing downward behind the peritoneum into the pelvic cavity, from which the pus escaped through an incision to reduce a femoral hernia. Large quantities of pus escaped through the opening for several months. Recovery otherwise uneventful. (This case was under the care of Dr. Corliss, Brookville, Ky.)

Rupture of the diaphragm may result from injury or disease without causing serious trouble or death. There may be recovery with or without surgical intervention. Peyerus, 1685, is among the first to report a rupture of the diaphragm. Fethergill, 1743-'50, describes the case of a female child 10 months old in which there was a cleaving of the diaphragm and the viscera altered. J. Verriest, 1844, gives his observations on rupture of the diaphragm, including hernia of the abdominal viscera. C. Morehead, 1844, reports a case of rupture of the diaphragm, sanguinous effusion into the left pleura. Murchison, 1862, mentions an unusual case of rupture of the diaphragm, accompanied by displacement of

the liver and stomach into left pleura, with rupture of stomach and left kidney and fracture of leg. He reports another case (1866) where there was displacement of liver into right pleura. Puzey, 1877, reports a rupture of diaphragm, with hernia of stomach and transverse colon, and impacted fracture of neck of the femur. Death. Kilgore, 1897, describes a case in which the stomach protruded through a laceration in the diaphragm.

Injuries of the diaphragm may be simple or compound, usually compound. For without laceration of the diaphragm there could not be hernia, of any form, through it. There is not necessarily hernia in injuries of the diaphragm, but hernia usually results. Lacher reports 276 cases of hernia of abdominal viscera through the diaphragm, 225 of which were on the left side. There is but one report in which the lung has become herniated through the diaphragm. The infrequency of hernia of the abdominal viscera through the diaphragm on the right side is due to the presence of the liver. Injury to the diaphragm may be from above or below, by weapons or wounds produced in various ways. The diaphragm may be ruptured from blows or falls due to violence without external manifestations. Halle, 1804, made observations on perforating ulcers of the diaphragm. Raphael, 1841, reports the case of a patient falling from the fourth story; fracture of the ribs, laceration of the liver, diaphragm and pericardium with singular displacement of the stomach. Bonamy, 1858, made observations of the ulceration and perforation of the diaphragm with eruption into the peritoneum and bronchi. Solly, 1867, reports on injuries of the diaphragm, illustrated by a case in which there were all the symptoms of laceration of that muscle, but the patient recovered. Marchant Gerald, 1900, describes a penetrating wound of the diaphragm, with rupture of the liver. The diaphragm was sutured; patient recovered.

Hernia of thoracic or abdominal viscera through the diaphragm may result from congenital defects, disease or injury. It may exist indefinitely without causing serious trouble in any way whatever. Obstruction and gangrene are two of the most common complications. C. Holt, 1700, describes hernia of the diaphragm in a child with the intestines and other viscera in the thorax. Cornell, 1825, reports a case of hernia of the diaphragm with the escape of all the intestines through the diaphragm into

the right side of the thorax. Benjumada, 1825, was among the first to make observations on congenital hernia of the diaphragm. Fehleisen, 1828, made observations on hernia of the diaphragm in a horse. Hughes, 1837, describes a hernia of the diaphragm caused by peritonitis, the ulcerated bowel breaking through the diaphragm, resulting in gangrene of the lungs. Williamson, 1848, contributed an interesting article on the wounds of the diaphragm, followed by hernia of the stomach and colon. Hillier, 1860, reports a congenital hernia allowing nearly all of the small intestines and two-thirds of the large to pass into the right side of the thorax. Berchon, 1861, reports a case of hernia of the diaphragm in a suicide. Autopsy revealed double penetration of the diaphragm, with the spleen rupturing into the thoracic cavity. Minor, 1873, mentions a case of double diaphragmatic hernia penetrating the pleural cavity. Foster, 1876, reports a diaphragmatic hernia with protrusion of stomach into thorax, rupture of liver, iliac veins and jejunum. Kough, 1884, describes buffer accident, necropsy revealing two ruptures of the diaphragm and protrusion of the right lobe of the liver, the spleen and the stomach into the thoracic cavity with laceration of spleen and kidneys. Davis, 1884, describes a singular case of congenital malformation of the bowels, intestines in the chest, in an adult.

Surgical operations of the diaphragm have been exceedingly limited. It is believed, however, that many interesting cases of diaphragmatic surgery have never been reported. Gunshot and stab wounds are the most common injuries. No cases where benign or malignant growths have been removed are recorded.

Cysts, parasitic or otherwise, tuberculosis and gangrene have escaped surgical intervention. Abscesses, lacerated and penetrating wounds, have been dealt with, more or less successfully, surgically in a few cases. Hernia of the abdominal viscera, through the diaphragm into the thoracic cavity, is probably the most frequent condition requiring surgical interference, and one in which the least has been done.

Great care should be exercised in dealing with all injuries of the body that hernia of the diaphragm may not be overlooked, especially in gunshot and stab wounds, blows upon the chest and abdomen and falling from a loft. There should be no hesitancy in applying the same surgical principles to the diaphragm as

are applied to the other tissues of the body requiring surgical intervention. Drainage in a certain class of surgical operations upon the diaphragm must be provided for anteriorly or posteriorly through the abdominal or thoracic cavity.

Catgut is the most desirable material for suturing the diaphragm. Gerard R. Ricketts, 1868, had a case in which a circular-saw cutting from behind divided all of the ribs on the right side near their spinal attachment. The lung and liver were extensively lacerated, also the right leaf of the diaphragm. Deep and superficial sutures (sixty-nine in number) were used in closing the various tissues. Drainage was established and the patient (a man, Augustus Fuller, 25 years of age) recovered. He is living May 1, 1903.

De Nicola, 1891, refers to a case in which he sutured the diaphragm. Rydygier, 1892, reports a case in which he had performed quite an extensive operation upon the diaphragm. Parlavocchio, 1893; Rossin, 1894, and Ballerini, 1894, each report a case of suture of the diaphragm.

SOME SUGGESTIONS OF INTEREST TO PHYSICIANS ON THE SCIENTIFIC ASPECT OF THE RACE QUESTION, WITH PARTICULAR REFERENCE TO THE WHITE AND NEGRO RACES.*

By JAMES ORR, M. D., Terrell, Texas.

The progress of the medical profession towards a better understanding of the problems of nature and their influence on man in health and disease has been the means of so changing its work that it is no longer composed of a mere lot of healers confined to the alleviation of human suffering, about the cause or prevention of which nothing is known. But without any disparagement of the art of healing, to which it is earnestly devoted, its labors have been extended along broader and more scientific lines in the direction of attainment of bodily perfection and the prevention or control of disease, till many brilliant achievements have been recorded, each step in the march of progress widening its fields of research and usefulness in behalf of humanity, to which its labors are entirely devoted.

*Prepared for the session of the Texas Medical Association, 1903.

Every question having any bearing on health or disease, or affecting the mental or physical development or progress of the human race, is ours to study; hence this paper, which is designed to bring the great disparity between the two races, and the suggestion of possible evils resulting therefrom to the attention of this learned body, not expecting or intending to add anything new to our existing knowledge on the subject, but for the purpose of stimulating a line of scientific investigation and research.

To my mind there are few, if any, more important questions for scientific study than those arising out of the two extreme branches of the human family thrown together in close relationship—extremes representing, on the one hand, the highest types of racial development, wisdom and intellectual and moral attainments; on the other, the lowest in ethnological standing. As physicians, it is our duty to study the physiological and psychological effect of this association and possible admixture of such widely dissimilar beings, their influence on the mental, moral or physical development of each other, and, consequently, on the State and nation. These questions are peculiarly in the domain of medical research, and it is with feelings of justifiable pride that I state my belief in the entire fairness with which they will be made, for our profession is honored by an universally admitted devotion to truth in all matters pertaining to its advancement and knowledge.

That southern physicians should better understand and appreciate some features of the race question is to be expected, but the scientific and historical data is open to all alike, and our observations only confirm their teachings. Of course, ignorance, bigotry, prejudice, self-interest, sentimentalism or hate will sway the minds, acts or expressions of some in this as in all other matters; but I believe the great body of thinking and intelligent physicians will dispassionately consider them with the view of determining their exact influence from a medical standpoint. And in presenting the subject I desire to be understood as dealing with classes or races, not individuals, for isolated exceptions prove or disprove nothing.

The white race represents the highest type of ethnological development and negroes the admittedly lowest, the difference between the two being so great as to fairly justify the terms

superior and inferior races. Indeed, so great is the difference that scholars learned in anthropology have contended, and do contend, and not without reasonable grounds, that they belong to a separate and distinct family, while extremists hold that negroes do not possess any of the attributes of the soul—that intangible something which separates man from all other animals.

I have never been satisfied with the monogenetic theory of the origin of man, his wide distribution over the face of the earth, inhabiting lands that it requires a strong imagination to believe he reached with his primitive means of travel from a common starting point; the lost Lemuria, his pronounced physical and intellectual differences, all incline me to the theory of polygenesis, and no stronger argument has been presented than that furnished by the negro.

Wherever found in a pure state the African aborigine presents a greater uniformity in his physical and moral types than any other of the great divisions of mankind; and since it is generally agreed by students of anthropology that he occupies the lowest position in the evolutionary scale, we are given an opportunity to compare him with the white race and with the quadrumana as represented by its highest order, the anthropoidal ape, inhabiting the same geographical sections with him, by which comparisons it is found that the negro differs from his own family and approaches that of the ape to a remarkable degree in the greater length of his arm, often two inches or more than that of a white man of the same height; in the projection of his jaw, materially altering the outlines of his facial angle; in the protruding forehead, high cheek-bones, weaker lower limbs, terminating in a large, flat foot, with big toe often of almost prehensile proportions. But the most startling analogy is found in the brain weight, the ape's brain weighing about twenty ounces, the negro's thirty-five, while that of the white man exceeds forty-five ounces. Follow this comparison a little further and we will find in many respects a wider divergence between the ape and the next order below it than that existing between it and the negro. In other words, anatomically the ape, in some respects, is nearer a negro than a monkey, while the negro possesses many of the physical attributes of the ape not found in the higher order of mankind.

The geographical distribution of the races, by which one having many of the character-

istics of the ape is indigenous to the same ancestral home 'mid the tropical jungles of the Torrid Zone, and another finds its natural habitat in the barren and inhospitable regions of the frozen North, from which he, like his opposite, the negro, has never departed till carried captive by the forces of a superior power invading his domain, is not the work of an accident or the result of tardy development through unpropitious environments, but positive proof of profound physiological differences between the different races of mankind.

In this connection it may not be uninteresting to mention a peculiarity of the negro in that his hair is not hair at all, but wool, being flat instead of round, with no cylindrical center. It is set into the scalp at right angles and felts like the wool of any other animal. Not so with the ape, which has true hair.

These and other physical characteristics fully justify the ethnological differences existing between the races, correctly placing them in separate classes with widely divergent intellectual development, power or capacity, which has been manifested throughout the world's history.

Without entering into an anthropological discussion regarding man, or the advocacy of any particular theory on that subject, I desire to state it as my firm conviction that certain facts are well established, or at least are indisputable from any scientific data now obtainable, among which I mention the following: *First.* If the doctrine of the creation of man is correct, then by no reasonable hypothesis can the same parentage be ascribed to both the white and negro races. *Second.* Accepting the theory of evolution and the ultimate perfection of all branches of the human race, the negro must be many thousand years behind the whites in evolutionary advancement. *Third.* If they constitute separate branches of the human family, their anatomical and physiological differences are such as to perpetually bar ethnical or racial equality. Hence the "race question," involving, as it does, the rights of whites as well as negroes, and the social, physical, mental and moral condition and development of both races.

In dealing with vast and important problems like these we should be guided by an intelligent perception of the truth uninfluenced by the demands of practical politics, the sophistry of demagogues or misguided zeal of uneducated philanthropists, which sometimes assumes the form of unreasonable bigotry.

Anatomical and physiological differences existing between the white and negro races have been productive of wide difference in ethnological progress; hence it is that during the multiplied centuries in which the superior race has reached its present high place, the negro has practically stood still, and to-day in his ancestral home occupies a position thousands of years behind that of the white race before the dawn of anything like authentic history. He is still a cannibal, human flesh being bartered like any other product, the meat being smoked and fat rendered as we do that of hogs. Whatever he may have evolved from, he has not yet reached that stage where he has reared one monument or left one sign of his people; and should any great catastrophe wipe him from existence future archeologists would find no relics of his civilization or advancement, for he has made none. The only difference between the habits of to-day and thousands of years ago are those made through foreign influences, either by force or his capacity to imitate, in which he is an adept, and to which he owes any apparently remarkable advancement his race has anywhere made. But imitation is not ethical progress.

As a slave among educated whites the negro enjoyed advantages never attained by his ancestry—his health, physical comfort, spiritual and moral welfare receiving the first care ever bestowed upon his race. Habits of industry were inculcated and the avenues of human intelligence and understanding opened to him. As an imitator he profited by these advantages, copying in his often fantastic way, as far as his undeveloped intellectual power gave him ability. His actions were controlled by the orders of his superiors, and his progress toward the civilization, etc., of the whites exhibited in his capacity to imitate those above him. Then came freedom, and we are to judge from history how well he was intellectually prepared to assume the duties, cares and responsibilities of a citizenship that a superior race had been ages in evolving. The *Encyclopedia Britannica* very truly says: "It must at the same time be confessed that the question of the mental temperament of the negro has been greatly complicated by the partizanship of interested advocates on either side. But for this disturbing element it would perhaps be readily admitted that the mental are at least as marked as the physical differences between the dark and other

racess; and as both are the gradual outcome of external conditions fixed by heredity, it follows that the attempt to suddenly transform the negro mind by foreign culture must be, as it has proved to be, as futile as an effort to suddenly transform his physical type."

From the foregoing, which so well expresses a fact, it is no matter for surprise that attempts to establish or control the destinies of civil government builded upon the highest plane of human education and intelligence by undeveloped negroes has been a failure.

Jamaica was once the fairest and most prosperous island in the world—its varied climate, splendid water and exceedingly fertile soil being sources of great wealth and prosperity. With freedom of the slaves, and later granting political equality, followed by negro supremacy, it soon lost prestige, going rapidly downward in the scale, till to-day the bulk of its population is negroes, who are thriftless, lazy, immoral and cruel, among whom poverty and want is the rule, and once fair Jamaica is no longer the pride of the British Empire.

Barbadoes, which is said not to contain one acre of poor soil, was once reputed to be the richest of the West Indian islands. With emancipation and political enfranchisement came negro supremacy, through numerical superiority, and beautiful Barbadoes' sun of prosperity went down behind a cloud of African ignorance. The whites have left the island, its splendid lands lie in idleness and waste and science can challenge philanthropy or politics to show ethnical advancement commensurate with the opportunities given, or sacrifices made, for its negro citizenship.

Striking as are the lessons gained from Jamaica and Barbadoes, it is left for Hayti to complete the picture of West Indian decline. Here negro dominion is complete and the government is their own. A century, devoted mostly to fratricidal strife, has marked no progress except downward toward a lower scale of civic virtue. Their national existence is a farce, while progress, morality, peace or prosperity, as we know them, are unknown among its ignorant blacks, who, left to themselves, give every indication of descent from a civilization they have been vainly trying to imitate to the ethnical level of their own race in far-away Africa.

In our own country, where association, educational advantages and political favoritisms

have been given the negro, and where his prominence as a national issue has stimulated his vanity to the utmost limit, he has made little progress, other than to attempt to imitate the religion and civilization around him. At the same time the gratification of all his animal passions and desires are given unrestrained liberty. Immorality and violations of the civil law bring neither ostracism or reproach from his race, for they see no wrong in them, and often feel aggrieved at the whites for interfering with their accepted customs in these matters.

The moral character and intellectual attainments of the negro are so truthfully portrayed by the Rev. Dr. Tucker that I quote from him as follows: "I know of whole neighborhoods where there is not one single negro couple, whether legally married or not, who are faithful to each other beyond a few weeks. In the midst of prayer-meeting I have known negroes to steal from each other, and on their way home they will rob any hen roost that lies conveniently at hand. The most pious negro that I know is confined in a penitentiary for an atrocious murder, and he persists in saying that he sees no offence against God in the crime, though he admits it is against the laws of the State." The Rev. Doctor mentions instances where negro missionaries live in open concubinage with members of their flocks or are addicted to petty thieving, lying or other vices, yet are earnest, active and successful preachers, seeming themselves totally unconscious of hypocrisy; nor do these acts diminish their influence with their race.

I can add nothing to this picture, the correctness of which will be appreciated by every one who has lived in the Southern States and who is at all familiar with negro characteristics; and here I wish to say, with emphasis, that to assign former slavery as a reason for this intellectual condition is an admission of demagoguery or an exhibition of ignorance of the plainest teachings of anthropology; and so far as educating moral intelligence into the negro—like some hot-house evolution—is concerned, I think most, if not quite all, unbiased observers agree that scholastic education and political importance have not improved the morals or increased the industry of the negro race.

The unbiased student sees in all this indisputable proof of the negro's lack of intellectual evolution to the standard of the white man, and

ample explanation of his failure to understand and appreciate the higher moral and intellectual requirements of our civilization, and the reason why civil governments have not prospered under his domination.

Associated with the white race, and having no civilization or individuality of his own, he seeks to pattern after those his mind recognizes as superior, endeavoring to imitate them in external matters and appearances without any perception of the magnitude of the civilization or importance of the morality he is pretending; hence my assertion that his reputed rapid ethnological advancement is an *imitation*.

Another and striking proof of inferior intellectual development is given by the utter indifference which the race exhibits towards scholastic education, few of them getting beyond the rudimentary studies, while those who reach the high school grades do not seem to understand the practical use or application of knowledge thus given them, and once out of school rapidly deteriorate to the common level, soon forgetting or neglecting the use and application of book learning. Those showing an aptitude for learning usually excel in studies which are mostly copied or memorized. The negro is a natural orator, many of them acquiring notoriety in the pulpit or on the stump, but beyond a few quaint sayings and his mannerisms, there is usually little to attract attention or furnish food for reflection. This is not surprising, however, for he is not a thinker himself, no full-blooded member of the race ever having given to the world a distinctive contribution as a scientist, artist or poet, and the twaddle of ignorant philanthropists about his being equal to the white man is scientifically disproved by every page of authentic history in existence.

A mistaken or misguided philanthropy under the guise of religion has sought to assign the negro a higher level than he is ethnically qualified to maintain; and designing politicians, influenced by a sordid desire for gain, or the wicked one of hate or revenge, taking advantage of these teachings, proclaim the doctrine of racial equality. Yet the merest tyro on this question knows that from a scientific standpoint the negro is many thousands of years behind the white race in evolutionary development; hence there can be no equality between them, except such as civil statutes prescribe in affairs of government, or such as custom may establish through association. This is the

feature of the race question with which we, as scientists, have to deal, for surely the association and admixture of widely different beings must ultimately have far-reaching effect; and it is our duty to investigate it as regards its influence on the mental and physical development of the human race, and whether or not the intellectual progress of mankind or the superiority of white civilization is endangered through inferior ethnological influences.

The effect of sudden elevation to positions, duties, importance and responsibilities far beyond his intellectual comprehension upon the psychological development of the negro forms an interesting and important study. To suppose that he can suddenly rise equal to the white race, intelligently assuming and discharging the civil, moral and political duties and obligations of a civilization that has been thousands of years in evolving, would be to go counter to all scientific and historical records of mankind. It would be wrong and unjust to the negro to expect it of him, and, as has been amply demonstrated, disastrous to the country that tried it. With the political aspect of the question we have nothing to do; but its scientific aspect becomes a matter of deep moment—not the least among which may yet be whether it is not a scientific wrong, in addition to a grave political mistake, to elevate an admittedly inferior race to complete equality with the superior, and what may be its influence on continued progress and prosperity might yet find its answer in Hayti, Jamaica and Barbadoes.

Again, in addition to any political wrong arising from exalting the negro to positions of importance beyond his intellectual capacity to maintain, comes the psychological wrong to his race, such exaltation being sure to result in retarding true intellectual development, as it stimulates his vanity until it often assumes offensive proportions and an aggravated self-importance, at the same time encouraging an already existing erroneous idea of freedom, whereby the large number of thriftless, idle, and often vicious, will increase. In the next place, outside interference with the negro on racial grounds, no matter through what motive actuated, has the effect of magnifying his feelings of importance, inculcating in him a belief in his absolute equality with, if not superiority over, whites among whom he lives, thus engendering race antagonisms, and his committing overt acts whereby envy, strife and hate are pro-

moted. With the cultivation of these conditions his value as a citizen decreases from day to day, and while increasing in idleness and thriftlessness, vainly waiting for some outside power to force political and social equality upon the country and bring him affluence without labor, he develops diseases and forms habits which impress influences upon the mind of his offspring with which we, as physicians, have to deal.

In proof of the gravity and importance of this I have but to call to mind the well-known and alarming increase in the ratio of insanity of every grade among negroes, or cite you to the grand army of negro cocaine fiends, spending every pittance they can procure for the coveted poison, with which to stimulate a sluggish intellect or drive a dull brain into the temporary establishment of an Elysian field or Ethiopian happiness. Temporary though the hallucination may be, and degrading, exhausting and rapidly impoverishing as it is, has no effect in decreasing the number of users. On the contrary, they are rapidly increasing, and the enlightened citizenship of our whole country must view with alarm the ultimate results of this debauching drug habit, which is of more immediate importance to us than the opium smoking of the whole Chinese Empire. Do these distressing conditions follow or depend upon attempted assumptions of functions beyond the intellectual capacity of the race? If they do, what will be the ultimate effect upon the whole people and the nation?

The negro uses cocaine to the excess he is doing purely through lack of intellectual comprehension of its debasing influences upon both individual and race. Thinking only of to-day and immediate gratification of present desires, he has no thought of to-morrow, no racial pride, no dream of a happy, influential, enlightened and prosperous posterity.

The effect of cocaine upon mental integrity and how far it is the immediate cause of insanity, is a question for consideration, while the ultimate physical depravity of the offspring, resulting from pathological changes due to long-continued and excessive use of the drug by negroes, is a matter for solicitude upon the part of those who have to live among, deal with and often support them, while as a scientific question it opens a fruitful field for research.

Political equality, official place and power must inevitably bring social equality to some

extent or in some form from which miscegenation will soon follow, and this is a serious race problem in the South. Will racial pride predominate and the white blood be kept pure, except among a certain poor and foreign element? and if it does not, and anything approaching amalgamation takes place, what will be the effect on future development? Every instinct of racial pride, every feeling of race superiority, every teaching from animal life is against amalgamation. No fine animal was ever improved by crossing it with an inferior one, and man, in my opinion, is no exception to the rule. Hence the immediate and remote results following miscegenation and the breeding of a hybrid race are important themes for scientific investigation.

We of the South know that mulattoes almost invariably inherit the vices or infirmities of both parents; hence it is commonly remarked that they constitute the most objectionable element in our negro population. We also know the extraordinary influence they exert over the pure blacks, who envy them the straight hair and lighter skin, marking the grade of admixture present. We know the feelings of superiority manifested by those who can boast of having "white blood" in their veins, notwithstanding this very color is an irradicable mark of ancestral sin; yet how little is known scientifically of the ultimate result of this mixing of widely divergent streams of the human family. The material for this investigation can be found in every country where slavery has existed. Will students of anthropology investigate it and give the truth to the world, or must the human race seek information necessary for national unity and prosperity and ethnical advancement from ignorant and unthinking demagogues, laboring under the guise of philanthropy, and corrupt and unpatriotic place-hunters seeking political power or advantages?

The ethnical differences existing between the two races are well marked and distinct and the history of negro civilization in the Western Hemisphere so recent that the truths cannot be controverted; hence my desire for unbiased scientific investigation along the lines suggested. I have advanced no conclusions or theories regarding the immediate or remote results to be expected, as they would require arguments too elaborate for a single paper with only limited time for its presentation. I have sought to free myself from partizanship or bias, briefly and

concisely presenting thoughts on the race question in its scientific aspect, which, to my mind, unquestionably establishes the white as the superior race, and that this superiority grows out of scientific differences which no statutory enactment can ever change or the bombastic dictum of egotistic officialism nullify. Betwixt the two races the Omnipotent Hand of an unseen power has placed the widest chasm existing among any branches of the human family. Therefore what God has put asunder let no man join together.

FIXATION OF THE PROLAPSED KIDNEY.*

By AUGUSTIN H. GOELET, M. D., New York, N. Y.

The author submits a technique of his own, employed with uniform success for three years, and argues that the many modifications of the operation prove its necessity and the inadequacy of all mechanical appliances, as belts and corsets, except in cases where the kidney has not descended below the border of the last rib in front, to prevent further descent, and after operation to support the abdominal organs and insure a feeling of greater security to the patient.

The indications for operation are prolapse of the kidney to the third degree—viz.: When the kidney has descended below the border of the lower rib in front and the upper pole can be palpated when the patient is in the erect position, because it is then an anomalous condition that should not exist and is not conducive to either health or comfort. In addition, the position of the kidney interferes with its circulation and function, and with the flow of urine from the kidney and by compression of the ovarian vein, which it overlaps, gives rise to pelvic disease.

Emphasis is given the importance of careful preparation of the patient for the operation to obviate post-operative vomiting, which strains the fleshly attached kidney and loosens it from its anchorage.

The chief objects to be accomplished are: Permanent fixation of the kidney in its normal position; complete detachment of the colon from

*Original abstract of paper read in section on Diseases of Women at the fifty-fourth annual meeting of the American Medical Association, at New Orleans, May 5-8, 1903.

the organ to obviate subsequent dragging upon it by the distended bowel; the avoidance of mutilation of the kidney and of the patient and cure of the symptoms and conditions produced by the prolapse.

The author's *technique* is, briefly, as follows: The kidney is reached by a vertical incision along the outer border of the erector spinæ muscle, the muscles being separated in the direction of their fibres; the fatty investment of the kidney is opened by a vertical incision near the spinal side of the wound, and the kidney is delivered through the incision upon the surface of the back. The fatty capsule is then completely detached upon both the anterior and posterior surfaces, care being taken to detach the colon completely. The redundant fatty capsule is trimmed off on both sides. The fibrous capsule of the kidney is not detached or otherwise disturbed. The sustaining sutures, two in number, are inserted only under the fibrous capsule, each having three insertions through and under this fibrous capsule and the ends are brought out through all the structures of the back at the upper angle of the incision in the skin and are tied over a fold of gauze to avoid cutting by the suture and loosening of the loop. The suture material used is silk-worm gut and the sutures are removed after three weeks. The wound is closed by two layers of catgut suture—one uniting the superficial fascia and the other the skin margins. A gauze drain is inserted about the lower pole of the kidney and brought out at the lower angle of the wound. This aids in supporting the organ, taking the strain off the sustaining sutures during the first forty-eight hours, after which time it is removed.

The author enumerates many reasons why nephropexy may prove a failure, the chief being as follows:

Postponement of the operation until the kidney is seriously disabled or an incurable pyelonephritis has developed or until the health of the patient is permanently shattered.

Failure to completely detach the colon from the kidney, which may drag the kidney away from its anchorage or give rise to annoying pain.

Failure to immobilize the kidney until it can become permanently adherent by employing absorbable sutures or by attaching them insecurely that yield to the constriction when it is tied; and,

Fixing the kidney too low down, where it will be irritated by pressure of the corsets or clothing constricting the waist.

The author concludes with a record of 159 nephropexies by the method he describes on 126 patients—in thirty-three of these both kidneys being fixed at the same time—without a death and without a single failure to secure permanent fixation. The ultimate results were cure of the symptoms and condition depending upon the prolapse in all of the cases he has been able to trace in from two to twelve months after operation.

SOME REMARKS ON A NEW MODIFICATION OF THE BOTTINI OPERATION.*

By W. B. WOLF, M. D., Baltimore,

Lecturer on Genito-Urinary and Venereal Diseases, Baltimore Medical College, etc.

Jacoby recently published a modification of the instrument generally employed in performing the Bottini operation. In his description he recommends a dial to be attached to the instrument which controls throughout the entire duration of the operation the commencement of the incision as well as the direction of the same with mathematical exactness.

The problem of controlling the knife of the incision, determined upon through cystoscopic observation, has, until the present time, found no practical solution.

The instruments mentioned by Wassildo A. Frendenberg and Biergoff, which present a combination of the Bottini and cystoscope, is limited not alone in its practicability, but also facility.

With the results before us, even Frendenberg, in his *Clinical Lectures*, which appeared this year, acknowledges this, in that he claims that it is advisable to replace the old typical instrument by the new one.

The following conditions must exist during the entire Bottini operation:

1. That the knife actually makes an incision at the desired place.

2. That the knife remains in the tissues in the direction prescribed, it being very important should the smallest deviation occur that this deviation be indicated on the control dial.

*Original abstract of a paper read before the Medical and Chirurgical Faculty of Maryland during its session at Baltimore Md., April, 1903.

3. The advantages of the new method do not diminish the value of the Bottini-Frendenberg incisor, or in any way displace the same.

4. That this method can be adopted in all cases.

In order to attain these results a method must be discovered in which the area previously cystoscoped is indicated on the incisor so that we know the point to begin, and for this purpose an angle, called the control angle, gives the hand, with the aid of the cystoscope, the possibility of finding the place where the incision should be made.

The control angle is the angle of two surfaces separated in the axis of the cystoscope; one of these surfaces is vertical and the other usually meets in the centre of the reflected area. The control angle or scale is supplied with a dial, which is horizontally connected with the cystoscope, and from this point the scale can be easily distinguished.

At the point of separation of the cystoscope lies the division of the control angle. The one side presents the vertical and the other combines with the line of separation the direction of the instrument employed. The dial controlling the operation is centimeter in circumference, carrying in the centre a place for the reception of the prism, which it surrounds; the scale on same ranging from 0° to 180°; no difficulty exists in reading the figures, as the one side presents a polished and the other a dull appearance.

The control dial is attached in such a manner to the Bottini that the number 180 corresponds with the direction of the knife. This direction is especially indicated by a separate point, which simultaneously presents the area of the control angle, the other remaining vertical area is constantly marked by an automatic indicator of the length of the dial and fastened to the centre.

On the one end of this indicator is a metallic ball, which performs the automatic indication; by the minutest turning of the cystoscope on its axis the same movement is perceptible on the indicator. Having with mathematical exactness found the place of incision the knife can be allowed to enter the angle, and the operation can be performed with the greatest degree of safety. In the Bottini-Frendenberg Incisor the dial is situated between the handle and the movable wheel, the arrow indicating on the inverted side of the dial, from which it projects.

The length of the incision having been previously indicated, care must be now exercised

that this dial and the automatic arrow constantly correspond.

One of the advantages derived from the use of the instrument is that the utmost precision is attainable; in order to appreciate this fact one must first view the folds of the hypertrophied lobes at the greatest distance, then the place of incision in the middle of the chosen area, and afterwards place it nearer, so that the angle of incision can be quickly read.

The new method facilitates not alone the exact place at which the incision ought to be made, but controls the direction of the instrument during the entire time.

Should, by the smallest turning of the instrument, the direction of the incision vary, the same is always indicated on the dial. The absolute control during this phase of the operation is of special importance, removing the formerly existing objection when knives having once become bent into the tissues the remainder of the instrument could not follow their course.

Furthermore, the control dial is of great value in ascertaining spaces as well as localization, and can be used in combination with the ordinary cystoscope.

I have performed three Bottini operations with this new modification, and every little turning of the instrument which otherwise would have escaped me was promptly indicated on the control dial.

Case I.—J. A., age 81, suffering for a number of years with frequent and painful micturition, was admitted to the M. G. Hospital January 11th, and had at that time acute retention. Withdrew 500 c. c. of urine, which was cloudy and full of pus, irrigated the patient's bladder with nitrate of silver daily for about two weeks until the urine became clear.

Cystoscopic examination revealed enlargement of middle and two lateral lobes; operated on January 26th, made an incision in the median line 3 c. m. in length at the right side at an angle of 55° and on the left 45°. The patient remained in bed three days, left the hospital, and urinates spontaneously; gets up once a night and has a residual urine of 50 c. c.

Case II.—J. L., age 66; for the past six years complained of frequent and painful micturition, which had increased in the past six months to such an extent that the patient under great straining had the desire to urinate every ten minutes, and had to get up during the night about twenty times, which was accompanied

with the desire to defecate. The straining was so intense that hernia and prolapse of the rectum was caused.

He was admitted to the hospital January 30th, the prostate was found enlarged, with residual urine of 600 c. c. Urine cloudy and full of pus; the cystoscopic examination revealed an enlarged middle lobe and two lateral lobe enlarged. The Bottini operation performed February 11th; made an incision 4 c. m. in median line, and one at an angle of 45° on the right side and 60° on the left. The patient was discharged from the hospital February 21st perfectly cured, voids his urine now regularly without pain, and has no residual urine.

Case III.—W. K., age 60; since November, 1901, suffered from inability to void his urine; since then has been using catheter about three times a day. Came to the city November 11th, suffering with frequent and painful micturition; has residual urine 400 c. c.; cystoscopic examination revealed intensely enlarged left lobe, and the right lobe not so prominent; the middle showed a decided bar formation from the right to the left. Made an incision in the median line 4 c. m. in length; at the left side, at an angle of 75°, and the right at an angle of 40° and 3 c. m. in length. Two weeks after the operation patient was able to empty his bladder regularly, and no residual urine was present.

13 W. Franklin St.

Book Notices.

Diseases of the Skin. By H. RADCLIFFE-CROCKER, M. D., F. R. C. P., Physician for Diseases of the Skin in University College Hospital, London, etc. *Third Edition, Revised and Enlarged. With 4 Plates and 112 Illustrations.* Philadelphia: P. Blakiston's Son & Co. 1903. Large 8vo. Pp. 1,466. Cloth. \$5 net.

This immense volume deals principally with the description, pathology, diagnosis and treatment of skin diseases, with special reference to the skin eruptions of children, and an analysis of 15,000 cases of skin disease. As compared with the second edition—issued seven

years ago—it describes some thirty-five or forty more dermatological conditions, and on many other pages are additions concerning established diseases, which makes this work a library in itself. In the sections devoted to diagnosis, treatment, etc., the marked ability of the author becomes apparent in the clearness of differentiation of diseases that have points of seeming similarity, and in matters relating to treatment the author shows his expert character in describing the details of the modes of treatment he has found beneficial. This book will long serve as a valuable guide to the general practitioner when he has skin disease cases to treat, while for the specialist it is compelled to occupy a conspicuous place as a ready reference volume. The simplicity of style and description makes the work thoroughly suitable for the student as well. This is a book that will be authority for years to come; hence the economy of purchasing this edition.

Manual of International Classification of Causes of Death. Prepared under the supervision of WILLIAM A. KING, Chief Statistician for Vital Statistics. Washington: Government Printing Office. 1902. Paper. Small quarto. Pp. 177.

This "Classification of Causes of Death," issued by the United States Census Office, refers to cases reported at the eleventh and twelfth censuses (1890 and 1900), and "covers the identical terms to be classified by registration officials for their local reports," and includes all terms found in the *Dictionnaire des Maladies* published by Dr. Bertillon. The Conference of State and Provincial Boards of Health, the American Public Health Association, etc., will be requested to consider the matter in detail and to settle, as far as practicable, all questions respecting the assignment of causes under the International Classification, as it now stands, and thus clear the way for a united front by American registrars in the revision of the classification itself in 1910." Any changes in assignment that appear necessary, with suggestions as to the best plan for harmonizing the differences of opinion that develop, are requested.

Nephritis. By PROF. DR. CARL VON NOORDEN, Physician in Chief to the City Hospital, Frankfurt a. M. New York: E. B. Treat & Co. 1903. Cloth. Small 8vo. Pp. 112. Price, \$1 net.

This is Part II of "Clinical Treatises on the

Pathology and Therapy of Disorders of Metabolism and Nutrition," Part I. having been noticed in this issue and Part III. in the issue of April 24th. It is one of the most valuable contributions of recent years to the subject of nephritis, combating in a convincing manner the moss-covered tradition that light meats are safer than the dark ones in various diseases, including nephritis, and questions the doctrine that milk is the best diet in all cases of the disease. Indeed, in many cases, the ingestion of fluids in nephritis needs rather to be restricted than encouraged. Instead of the familiar directions handed down from an earlier period, he prescribes a therapy, the effectiveness of which in saving the kidneys in renal diseases and in the protective treatment of kidney diseases he has repeatedly proven clinically. About fifty pages are given to the principles underlying the dietetic and physical treatment of both acute nephritis and contracted kidney. The practitioner who reads this book will learn a great deal which experience sustains as truth.

Obesity—The Indications for Reduction Cures. By PROF. DR. CARL VON NOORDEN, Senior Physician to the City Hospital in Frankfurt a. M. New York: E. B. Treat & Co. 1903. Cloth. Small 8vo. Pp. 59. Price, 50 cents.

We cannot help believing that the publishers make an error in giving the leading title of this book and of others of the same series, "Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition," of which series this monograph is Part I. In April 24th issue Part III. of the same series, on "Membranous Catarrh of the Intestines," was noticed. But the busy doctor is not apt to be struck with the title of "Diseases of Metabolism," etc., as indicative of the subject of each of the books of the series being issued. The present little book on *obesity* considers the subject in both a scientific and practical manner. On almost every page some fact of value with reference to the recognition of the causes of obesity and the proper method of treating the condition under various conditions is brought out conspicuously, and as a hand treatise on obesity, the work will force itself upon the attention of doctors, especially when they have cases of this condition to treat.

Editorial.

Principles of Medical Ethics of the American Medical Association.

During the session of the American Medical Association at New Orleans, just adjourned, perhaps the one item of most general interest done by the House of Delegates was the unanimous adoption of the subjoined *Principles of Medical Ethics*, which takes the place of the old "Code of Ethics," and is from this time on the guiding rule relating to all questions of ethics in the regular profession. The document is the result of agreement between all parties—some going to the session with one opinion, others with another, etc.

It will be noted that the word "code" has been eliminated from the caption, and the expression, "*The Principles of Medical Ethics of the American Medical Association*" adopted as adequately descriptive. Such action is based on the idea that the American Medical Association may be conceived to occupy some such relation to the constituent State Associations as the United States, through its Constitution, holds to the several States. It was therefore regarded wiser to formulate the *principles* of medical ethics, without definite reference to code or penalties—thus leaving the respective States, etc., to form such code and establish such penalties as they may regard to be fitting and proper for regulating the professional conduct of their members: *provided*, of course, that in so doing there be no infringement of the established ethical principles of the Association. To facilitate the business of the parent organization and promote its harmony, this course was regarded as wise and well intended, which leaves to the State Associations large discretionary powers concerning membership and other admittedly State affairs.

To a large extent the phraseology of the old code has been retained, aiming, however, at condensation of expression and a better understanding of some of its statements.

The following is the full text of the document promulgated by the American Medical Association as the *Principles of Medical Ethics*:

CHAPTER I.—THE DUTIES OF PHYSICIANS TO THEIR PATIENTS.

Section 1. Physicians should not only be ever ready to obey the calls of the sick and injured, but should be mindful of the high character of

their mission and of the responsibilities they must incur in the discharge of momentous duties. In their ministrations they should never forget that the comfort, the health, and the lives of those intrusted to their care depend on skill, attention and fidelity. In deportment they should unite tenderness, cheerfulness and firmness, and thus inspire all sufferers with gratitude, respect and confidence. These observances are the more sacred because, generally, the only tribunal to adjudge penalties for unkindness, carelessness or neglect is their own conscience.

Sec. 2. Every patient committed to the charge of a physician should be treated with attention and humanity, and reasonable indulgence should be granted to the caprice of the sick. Secrecy and delicacy should be strictly observed; and the familiar and confidential intercourse to which physicians are admitted in their professional visits should be guarded with the most scrupulous fidelity and honor.

Sec. 3. The obligation of secrecy extends beyond the period of professional services; none of the privacies of individual or domestic life, no infirmity of disposition or flaw of character observed during medical attendance should ever be divulged by physicians except when imperatively required by the laws of the State. The force of the obligation of secrecy is so great that physicians have been protected in its observance by courts of justice.

Sec. 4. Frequent visits to the sick are often requisite, since they enable the physician to arrive at a more perfect knowledge of the disease, and to meet promptly every change which may occur. Unnecessary visits are to be avoided, as they give undue anxiety to the patient; but to secure the patient against irritating suspense and disappointment, the regular and periodical visits of the physician should be made as nearly as possible at the hour when they may be reasonably expected by the patient.

Sec. 5. Ordinarily, the physician should not be forward to make gloomy prognostications, but should not fail, on proper occasions, to give timely notice of dangerous manifestations to the friends of the patient, and even to the patient, if absolutely necessary. This notice, however, is at times so peculiarly alarming when given by the physician that its deliverance may often be preferably assigned to another person of good judgment.

Sec. 6. The physician should be a minister of hope and comfort to the sick, since life may be

lengthened or shortened not only by the acts but by the words or manner of the physician, whose solemn duty is to avoid all utterances and actions having a tendency to discourage and depress the patient.

Sec. 7. The medical attendant ought not to abandon a patient because deemed incurable; for continued attention may be highly useful to the sufferer and comforting to the relatives, even in the last period of the fatal malady, by alleviating pain and by soothing mental anguish.

Sec. 8. The opportunity which a physician has of promoting and strengthening the good resolutions of patients suffering under the consequences of evil conduct ought never to be neglected. Good counsels, or even remonstrances, will give satisfaction, not offence, if they be tactfully proffered and evince a genuine love of virtue, accompanied by a sincere interest in the welfare of the person to whom they are addressed.

CHAPTER II.—THE DUTIES OF PHYSICIANS TO EACH OTHER AND TO THE PROFESSION AT LARGE.

Article I. Duties for the Support of Professional Character.—Section 1. Every one on entering the profession, and thereby becoming entitled to full professional fellowship, incurs an obligation to uphold its dignity and honor, to exalt its standing and to extend the bounds of its usefulness. It is inconsistent with the principles of medical science, and it is incompatible with honorable standing in the profession for physicians to designate their practice as based upon an exclusive dogma or a sectarian system of medicine.

Sec. 2. The physician should observe strictly such laws as are instituted for the government of the members of the profession; should honor the fraternity as a body; should endeavor to promote the science and art of medicine, and should entertain a due respect for those seniors who, by their labors, have contributed to its advancement.

Sec. 3. Every physician should identify himself with the organized body of his profession as represented in the community in which he resides. The organization of local or county medical societies where they do not exist should be effected, so far as practicable. Such county societies, constituting as they do the chief element of strength in the organization of the pro-

fession, should have the active support of their members and should be made instruments for the cultivation of fellowship, for the exchange of professional experience, for the advancement of medical knowledge, for the maintenance of ethical standards, and for the promotion in general of the interests of the profession and the welfare of the public.

Sec. 4. All county medical societies thus organized ought to place themselves in affiliation with their respective State Associations, and these in turn with the American Medical Association.

Sec. 5. There is no profession from the members of which greater purity of character and a higher standard of moral excellence are required than the medical; and to attain such eminence is a duty every physician owes alike to the profession and to patients. It is due to the patients, as without it their respect and confidence cannot be commanded; and to the profession because no scientific attainments can compensate for the want of correct moral principles.

Sec. 6. It is incumbent on physicians to be temperate in all things, for the practice of medicine requires the unremitting exercise of a clear and vigorous understanding; and in emergencies—for which no physician should be unprepared—a steady hand, an acute eye, and an unclouded mind are essential to the welfare, and even to the life, of a human being.

Sec. 7. It is incompatible with honorable standing in the profession to resort to public advertisements or private cards inviting the attention of persons affected with particular diseases; to promise radical cures; to publish cases or operations in the daily prints, or to suffer such publications to be made; to invite laymen (other than relatives who may desire to be at hand) to be present at operations; to boast of cures and remedies; to adduce certificates of skill and success; or to employ any of the other methods of charlatans.

Sec. 8. It is equally derogatory to professional character for physicians to hold patients for any surgical instruments or medicines; to accept rebates on prescriptions or surgical appliances; to assist unqualified persons to evade legal restrictions governing the practice of medicine; to dispense or promote the use of secret medicines, for if such nostrums are of real efficacy, any concealment regarding them is inconsistent with beneficence and professional liberality, and if mystery alone give them public

notoriety, such craft implies either disgraceful ignorance or fraudulent avarice. It is highly reprehensible for physicians to give certificates attesting the efficacy of secret medicines, or other substances used therapeutically.

Article II.—Professional Services of Physicians to Each Other.—Section 1. Physicians should not, as a general rule, undertake the treatment of themselves nor of members of their family. In such circumstances they are peculiarly dependent on each other; therefore, kind offices and professional aid should always be cheerfully and gratuitously afforded. These visits ought not, however, to be obtrusively made, as they may give rise to embarrassment or interfere with that free choice on which such confidence depends.

Sec. 2. All practicing physicians and their immediate family dependents are entitled to the gratuitous services of any one or more of the physicians residing near them.

Sec. 3. When a physician is summoned from a distance to the bedside of a colleague in easy financial circumstances, a compensation proportionate to travelling expenses and to the pecuniary loss entailed by absence from the accustomed field of professional labor should be made by the patients or relatives.

Sec. 4. When more than one physician is attending another, one of the number should take charge of the case, otherwise the concert of thought and action so essential to wise treatment cannot be assured.

Sec. 5. The affairs of life, the pursuit of health and the various accidents and contingencies to which a physician is peculiarly exposed sometimes require the temporary withdrawal of this physician from daily professional labor and the appointment of a colleague to act for a specified time. The colleague's compliance is an act of courtesy, which should always be performed with the utmost consideration for the interest and character of the family physician.

Article III. The Duties of Physicians in regard to Consultations.—Section 1. The broadest dictates of humanity should be obeyed by physicians whenever and wherever their services are needed to meet the emergencies of disease or accident.

Sec. 2. Consultations should be promoted in difficult cases, as they contribute to confidence and more enlarged views of practice.

Sec. 3. The utmost punctuality should be observed in the visits of physicians when they are

to hold consultations, and this is generally practicable, for society has been so considerate as to allow the plea of a professional engagement to take precedence over all others.

Sec. 4. As professional engagements may sometimes cause delay in attendance, the physician who first arrives should wait for a reasonable time, after which the consultation should be considered as postponed to a new appointment.

Sec. 5. In consultations no insincerity, rivalry or envy should be indulged; candor, probity and all due respect should be observed toward the physician in charge of the case.

Sec. 6. No statement or discussion of the case should take place before the patient or friends, except in the presence of all the physicians attending, or by their common consent; and no opinions or prognostications should be delivered which are not the result of previous deliberation and concurrence.

Sec. 7. No decision should restrain the attending physician from making such subsequent variations in the mode of treatment as any unexpected change in the character of the case may demand. But at the next consultation reasons for the variations should be stated. The same privilege, with its obligation, belongs to the consultant when sent for in an emergency during the absence of the family physician.

Sec. 8. The attending physician, at any time, may prescribe for the patient; not so the consultant, when alone, except in a case of emergency or when called from a considerable distance. In the first instance the consultant should do what is needed, and in the second should do no more than make an examination of the patient and leave a written opinion, under seal, to be delivered to the attending physician.

Sec. 9. All discussions in consultation should be held as confidential. Neither by words nor by manner should any of the participants in a consultation assert or intimate that any part of the treatment pursued did not receive his assent.

Sec. 10. It may happen that two physicians cannot agree in their views of the nature of a case and of the treatment to be pursued. In the event of such disagreement, a third physician should, if practicable, be called in. None but the rarest and most exceptional circumstances would justify the consultant in taking charge of the case. He should not do so merely upon the solicitation of the patient or friends.

Sec. 11. A physician who is called in consul-

tation should observe the most honorable and scrupulous regard for the character and standing of the attending physician, whose conduct of the case should be justified, as far as can be, consistently with a conscientious regard for truth, and no hint or insinuation should be thrown out which could impair the confidence reposed in the attending physician.

Article IV. Duties of Physicians in Cases of Interference.—Section 1. Medicine being a liberal profession, those admitted to its ranks should found their expectations of practice especially on the character and the extent of their medical education.

Sec. 2. The physician, in his intercourse with a patient, under the care of another physician, should observe the strictest caution and reserve; should give no disingenuous hints relative to the nature and treatment of the patient's disorder, nor should the course of conduct of the physician, directly or indirectly, tend to diminish the trust reposed in the attending physician.

Sec. 3. The same circumspection should be observed when, from motives of business or friendship, a physician is prompted to visit a person who is under the direction of another physician. Indeed, such visits should be avoided, except under peculiar circumstances; and when they are made no inquiries should be instituted relative to the nature of the disease or the remedies employed, but the topics of conversation should be as foreign to the case as circumstances will admit.

Sec. 4. A physician ought not to take charge of or prescribe for a patient who has recently been under the care of another physician, in the same illness, except in case of a sudden emergency, or in consultation with the physician previously in attendance, or when that physician has relinquished the case or has been dismissed in due form.

Sec. 5. The physician acting in conformity with the preceding section should not make damaging insinuations regarding the practice previously adopted, and, indeed, should justify it if consistent with truth and probity; for it often happens that patients become dissatisfied when they are not immediately relieved, and, as many diseases are naturally protracted, the seeming want of success in the first stage of treatment affords no evidence of a lack of professional knowledge or skill.

Sec. 6. When a physician is called to an urgent case, because the family attendant is not at

hand, unless assistance in consultation is desired, the former should resign the care of the patient immediately on the arrival of the family physician.

Sec. 7. It often happens, in cases of sudden illness, and of accidents and injuries, owing to the alarm and anxiety of friends, that several physicians are simultaneously summoned. Under these circumstances, courtesy should assign the patient to the first who arrives and who, if necessary, may invoke the aid of some of those present. In such a case, however, the acting physician should request that the family physician be called, and should withdraw unless requested to continue in attendance.

Sec. 8. Whenever a physician is called to the patient of another physician during the enforced absence of that physician, the case should be relinquished on the return of the other.

Sec. 9. A physician, while visiting a sick person in the country, may be asked to see another physician's patient because of a sudden aggravation of the disease. On such an occasion the immediate needs of the patient should be attended to and the case relinquished on the arrival of the attending physician.

Sec. 10. When a physician who has been engaged to attend an obstetric case is absent and another is sent for, delivery being accomplished during the vicarious attendance, the acting physician is entitled to the professional fee, but must resign the case on the arrival of the physician first engaged.

Article V. Difference Between Physicians.—

Section 1. Diversity of opinion and opposition of interest may, in the medical as in other professions, sometimes occasion controversy and even contention. Whenever such unfortunate cases occur and cannot be immediately adjusted, they should be referred to the arbitration of a sufficient number of impartial physicians.

Sec. 2. A peculiar reserve must be maintained by physicians toward the public in regard to some professional questions, and as there exist many points in medical ethics and etiquette through which the feelings of physicians may be painfully assailed in their intercourse, and which cannot be understood or appreciated by general society, neither the subject matter of their differences nor the adjudication of the arbitrators should be made public.

Article VI. Compensation.—Section 1. By the members of no profession are eleemosynary services more freely dispensed than by the med-

ical, but justice requires that some limits should be placed to their performance. Poverty, mutual professional obligations, and certain of the public duties named in sections 1 and 2 of chapter III should always be recognized as presenting valid claims for gratuitous services; but neither institutions endowed by the public or by the rich, or by societies for mutual benefit, for life insurance or for analogous purposes, nor any profession or occupation, can be admitted to possess such privilege.

Sec. 2. It cannot be justly expected of physicians to furnish certificates of inability to serve on juries, or to perform militia duty; or to testify to the state of health of persons wishing to insure their lives, obtain pensions or the like, without a pecuniary acknowledgment. But to persons in indigent circumstances such services should always be cheerfully and freely accorded.

Sec. 3. Some general rules should be adopted by the physicians in every town or district relative to the minimum pecuniary acknowledgment from their patients; and it should be deemed a point of honor to adhere to these rules with as much uniformity as varying circumstances will admit.

Sec. 4. It is derogatory to professional character for physicians to pay or offer to pay commissions to any person whatsoever who may recommend to them patients requiring general or special treatment or surgical operations. It is equally derogatory to professional character for physicians to solicit or to receive such commissions.

CHAPTER III. THE DUTIES OF THE PROFESSION TO THE PUBLIC.

Section 1. As good citizens it is the duty of physicians to be very vigilant for the welfare of the community, and to bear their part in sustaining its laws, institutions and burdens; especially should they be ready to co-operate with the proper authorities in the administration and the observance of sanitary laws and regulations, and they should also be ever ready to give counsel to the public in relation to subjects especially appertaining to their profession, as on questions of sanitary police, public hygiene and legal medicine.

Sec. 2. It is the province of physicians to enlighten the public in regard to quarantine regulations; to the location, arrangement and dietaries of hospitals, asylums, schools, prisons and similar institutions; in regard to measures for

the prevention of epidemic and contagious diseases; and when pestilence prevails it is their duty to face the danger, and to continue their labors for the alleviation of the suffering people, even at the risk of their own lives.

Sec. 3. Physicians, when called on by legally constituted authorities, should always be ready to enlighten inquests and courts of justice on subjects strictly medical, such as involve questions relating to sanity, legitimacy, murder by poison or other violent means, and various other subjects embraced in the science of medical jurisprudence. It is but just, however, for them to expect due compensation for their services.

Sec. 4. It is the duty of physicians, who are frequent witnesses of the great wrongs committed by charlatans, and of the injury to health and even destruction of life caused by the use of their treatment, to enlighten the public on these subjects, and to make known the injuries sustained by the unwary from the devices and pretensions of artful imposters.

Sec. 5. It is the duty of physicians to recognize and by legitimate patronage to promote the profession of pharmacy, upon the skill and efficiency of which depends the reliability of remedies, but any pharmacist who, although educated in his own profession is not a qualified physician, and who assumes to prescribe for the sick, ought not to receive such countenance and support. Any druggist or pharmacist who dispenses deteriorated or sophisticated drugs or who substitutes one remedy for another designated in a prescription, ought thereby to forfeit the recognition and influence of physicians.

Reorganization of State Medical Societies on the Plan of Delegates from City or County Societies.

For some years a strenuous effort has been made by some to reorganize the various State Societies of the Union on the basis of city or county medical society representation. We very seriously doubt the propriety of attempting even the reorganization of many State Societies on such a basis. After persistent effort up to the time of the recent session of the American Medical Association at New Orleans, only eighteen States have such organization, as the committee of that Association recommends. It is better, with reference to this question of reorganizations, to adopt the sentiment of the House of Delegates of the national body as it relates to the Principles of Medical Ethics, which leaves it

to the respective States to formulate their own rules of government, and not strive after such uniformity of details as will make all alike. Such uniformity may be all right in States having a relatively equal representation from each county or city, but there are some States—indeed, many—in which such equality is not attainable.

In the first place, we are of the opinion that a scientific body should be democratic, and not subject to autocratic rulings. The backwoods practitioner, who joins and attends the session of his State Society with a view to professional and personal improvement should have every privilege of the floor accorded him as that granted the professional dude of a city; and he should have the same rights of designating his preference as to the general policy of the State Society or in the selection of its officers as the more pretentious member, who wears better clothes and exhibits jewelled studs and rings, etc. That backwoodsman, if he has received the required medical education of the day, and has successfully passed his State Medical Examining Board, will oftentimes surprise the professor by his genius and tact in differentiation of signs and symptoms, and in the judgment he displays in the treatment of disease; and yet he may never be able to secure a position in the House of Delegates, nor an official position in the Society. We must not forget that that doctor has feeling, and may be more or less sensitive with reference to the position of a delegate from his county, when he recognizes that he is as competent as the other fellow to decide questions that may arise before the representative body.

In the next place, to centralize all the power of many State Societies in a delegated body is to reduce the representation practically to a few communities, and sooner or later the State Society will so degenerate practically into a local or district society, while yet the roll book would show an apparent large membership. It is a well accredited fact that people gradually lose interest in organizations in which they do not recognize themselves as more or less *active* members. Nor are members by compulsion usually of much service to a scientific or professional organization. Generally speaking, they must feel a personal interest in the Association.

In many States there are too few doctors in certain counties who live conveniently enough to a common county centre to organize themselves into an active county society. Such a remark

applies, for instance, to about fifty of the hundred counties of Virginia. And yet in nearly all the other fifty counties there are two or three or more able practitioners—each of whom would or does make a valuable member of the State Society in his individual capacity.

Our advice is, not to insist upon every State Medical Society to become dependent upon the county societies. Certainly would we advise the Committee on Reorganization of the State Societies, appointed by the American Medical Association, to let Virginia alone in this respect. What State Society with such environments can show so excellent a record? It is thoroughly ethical in all its professional relationships. Out of a probable medical population of 1,600 doctors in the State who are worthy of membership there are about 1,200 members. It has an average attendance of about 225 to 250 upon its annual sessions. In its scientific proceedings, its work is such as to attract the attendance and participation of some of the leading men of the country. Among those who have attended its sessions and participated in the discussions have been such as Drs. Crawford W. Long—the discoverer of surgical anæsthesia by ether—J. Marion Sims, the father of gynecology; Henry F. Campbell and Robert Battey, of Georgia, whose names are noted in surgical history; J. Chisolm, of Baltimore, a pioneer in ophthalmological work; Lewis A. Sayre, who revolutionized the doctrines of orthopedics, and others of like distinction, each of whom while living repeatedly participated in the sessions of the Society and expressed themselves as feeling it good to be there. It has supplied two presidents of the American Medical Association—Dr. Wellford, before the Confederate war, and the renowned Dr. Hunter McGuire since, whose portrait was presented with a glowing, splendid eulogy by Dr. Rodman, of Philadelphia, to the National Association at its recent session in New Orleans. Of the living great men who frequent its sessions or contribute to its proceedings because they feel “a drawing to it” are such as Drs. J. H. Kellogg, of Michigan; Geo. Tucker Harrison, of New York; Edward P. Davis, of Philadelphia; J. McF. Gaston, of Georgia; Joseph Price, of Philadelphia; Edwin Ricketts, of Cincinnati, and numerous others from District of Columbia and adjoining States. Drs. J. H. Musser, of Philadelphia, the recently elected president of the American Medical Association, and John C. Hemmeter, of Baltimore, are the selected leaders

of the discussion on Gastro-Intestinal diseases at the meeting in Roanoke next September. With a record such as this, where each member feels his individuality and gives his voluntary attendance, and enjoys the meetings and feels profited by his coming, is it safe, for the good of the profession, to venture the putting of red tape about its members?

In its democratic form of organization, it was one of the first to secure the establishment of a State Board of Medical Examiners, which Board faithfully performs its duty. Under its general ideas of progress, the three medical colleges of Virginia now annually draw to this State nearly 800 medical students from numerous States, where formerly about 200 was the total number. Through its influence, Virginia has enacted laws which hereafter will prevent quacks and charlatans from practicing in the State, and all of this and much more has been accomplished because each individual member of the Medical Society of Virginia is made to feel that he is an important factor in the development of medical interests of the State.

We do not feel that the time has yet arrived when the Medical Society of Virginia should change its plan of organization; and we doubt not that other States, if they stop a moment to consider the proposition, would recognize the facts above given as applicable to their State organizations.

There is nothing in what we have said intended to retard the development of county societies to be in affiliation with the State Societies—wherever or whenever practicable. On the contrary, we would earnestly advocate the organization of active county or district societies, and will cheerfully contribute our mite of influence to their success.

The American Medical Association

Acted wisely, in our opinion, in simply promulgating certain *principles of ethics*—leaving it to State Societies to formulate their own rules not in conflict with the *principles*, which we publish in full in this issue. The extremely objectionable permissions granted in the Code proposed at Saratoga Springs have all been eliminated, and good, sound principles now take their place.

The meeting of 1904 is to be held at Atlantic City, N. J. The officers-elect for the session 1903-1904 are: Dr. John H. Musser, Philadelphia, *President*; Drs. G. C. Savage, Nash-

ville, Tenn., Isadore Dyer, New Orleans, La., Crawford Lester Hall, of Missouri, and George F. Jenkins, of Iowa, *Vice-Presidents*; Dr. Henry P. Newman, Chicago, Ill., *Treasurer*; Dr. George H. Simmons, Chicago, Ill., *Secretary*.

The section work of the Association was of the highest order. Notable advances in almost all the departments of medicine were recognized—to some of which we will have occasion to refer in future issues.

The social features were characterized by earnest and bountiful hospitality. The misfortune, indeed, was that the scientific work of the sessions and the business of the House of Delegates so completely occupied the time of the visitors that but relatively few had opportunities to partake of many of the entertainments provided. The railroads are to be thanked for the excellent services rendered. The Southern Railway from Washington, D. C., and various points in Virginia and the Southern States generally, especially furnished comfortable trains and courteous, accommodating conductors, etc.

Laboratory for Study of Abnormal Classes.

The International Congress of Criminology of Europe, consisting of the chief specialists of the world, recommended the establishment of a laboratory in the principal governments to develop the study of the abnormal classes. The Bureau of Education at Washington for the past ten years has carried on this work under many difficulties, and has published six volumes on crime and related subjects which have taken authoritative rank in Europe, as well as in the Americas. Notwithstanding their pioneer nature, these works are used as reference or text books in our universities. During the last Congress the Judiciary Committees of the House and Senate unanimously reported a bill favorably to establish and develop such proposed laboratory. But the Commissioner of Education, who has practically no scientific training, dropped out the recommendation to this government. In so doing he practically sets himself up against the medical profession of this country, and the highest authorities in these lines in the world. The opinion of this official (the Commissioner of Education) is made to defeat the wishes of numerous learned associations and specialists, who are thoroughly educated men—many of them much better than the Federal chief himself. We trust the matter will receive proper attention in the next Con-

gress, and that the objections of the Commissioner of Education will be overruled. The *Interstate Medical Journal*, of St. Louis, has a strong editorial on this subject.

Railway Car Sanitation in Texas.

Texas is the first State in America to pass a law requiring railway companies to disinfect their coaches. The *Texas Medical Journal* says the law will save thousands of lives. The public have scarcely a suspicion of the danger that lurks in upholstered cars and sleeping apartments in public houses. Consumption alone kills 150 where yellow fever kills 1; and cars and hotels are nearly always infected with that germ, to say nothing of diphtheria, etc.

University College of Medicine Finals

Came off in great shape at the Academy of Music on Thursday night, May 14, 1903, with Hon. Don P. Halsey, State Senator from Lynchburg, Va., as orator of the occasion. His address was on Chivalry and Honor, and proved to be a most valuable talk to the young men who sat before him.

The degree of *Doctor of Medicine* was conferred upon the following graduates: J. Morgan Biedler, Tenth Legion, Va.; James Spencer Burger, Farmville, Va.; Walker Aylett Campbell, Enfield, Va.; Chesley Lanier Carter, Chatham, Va.; Armistead C. Crump, Richmond, Va.; Joseph Thomas Davis, Pittston, Va.; Charles Oliver Dearthmont, Boyce, Va.; Courtney Edmond, Millboro, Va.; James Carter Giles, Chatham, Va.; Wm. Wallace Gill, Petersburg, Va.; Betram Hensel Gilmer, Island Ford, Va.; Fred. Gochner, Upperville, Va.; Benjamin H. Gray, Cumberland, Va.; Percy Kline Graybill, Amsterdam, Va.; Alfred F. Hammond, Trenton, N. C.; Luther Jerrell Head, Penola, Va.; J. McChesney Hogshead, Middlebrook, Va.; Milie Christopher Horton, Wakefield, N. C.; Thomas Holland Johnson, Radford, Va.; Claude D. Kellam, Shiloh, N. C.; Louis K. Leake, East Leake, Va.; W. Otwa Lee, Danville, Va.; Herbert Wallis Lewis, Culpeper, Va.; James Marshall Lilly, Allenton Ferry, N. C.; Napoleon B. Mariner, Williamston, N. C.; Stuart Neville Michaux, Richmond, Va.; William Bailey Murphy, Tomahawk, N. C.; Maryus Curtis Oldham, Farnham, Va.; Thomas Garrett Pretlow, Richmond, Va.; John Peebles Proctor, Drakes Branch, Va.; Wade Hampton Saunders, Roanoke, Va.; Benjamin C. Shuler,

Grove Hill, Va.; Howard Clement Slaughter, Danville, Va.; Marvin L. Smoot, Salisbury, N. C.; Homer Amos Spitler, Long, Va.; Moses C. Sytle, Richmond, Va.; Hugh R. Thompson, Reidsville, N. C.; Benjamin Lanier Traynham, Portsmouth, Va.; Charles Clifton Tucker, Blackstone, Va.; Cary Elphus Via, Newport News, Va.; Austin Alvin Weaver, Elizabeth City, N. C.; E. R. Williams, Hayfield, Va.; Herbert Bass Williams, Gladys, Va.

The hospital appointments announced were:

VIRGINIA HOSPITAL, *Richmond, Va.*—Drs. F. Gochnauer, Upperville, Va., and P. K. Graybill, Amsterdam, Va.; *Alternates*, Drs. C. C. Tucker, Blackstone, Va., and W. H. Saunders, Roanoke, Va.

ST. LUKE'S HOSPITAL, *Richmond, Va.*—Dr. J. P. Proctor, Drakes Branch, Va.; *Alternate*, Dr. H. C. Slaughter, Danville, Va.

RETREAT FOR THE SICK, *Richmond, Va.*—Dr. L. J. Head, Penola, Va.; *Alternate*, Dr. W. B. Murphy, Jr., Tomahawk, N. C.

RICHMOND EYE, EAR AND THROAT INFIRMARY, *Richmond, Va.*—*Reappointed*, Dr. L. A. Robertson; *Alternate*, Dr. J. McChesney Hogshead, Middlebrook, Va.

CITY ALMSHOUSE HOSPITAL, *Richmond, Va.*—Drs. Armistead C. Crump, Richmond, Va., and M. C. Sytle, Richmond, Va.; *Alternates*, Drs. Stewart Neville Michaux, Richmond, Va., and Courtney Edmond, Millboro, Va.

U. S. MARINE HOSPITAL, *New York City.*—Dr. B. H. Gray, Cumberland, Va.; *Alternate*, Dr. H. G. Williams, Gladys, Va.

U. S. MARINE HOSPITAL, *Chicago, Ill.*—Dr. L. K. Leake, East Leake, Va.; *Alternate*, Dr. C. W. Williams, Elizabeth City, N. C.

U. S. MARINE HOSPITAL, *Detroit, Mich.*—Dr. M. C. Horton, Wakefield, N. C.; *Alternate*, Dr. C. D. Kellam, Shiloh, N. C.

CENTRAL STATE HOSPITAL, *Petersburg, Va.*—Dr. H. A. Spitler, Long, Va.; *Alternate*, Dr. C. O. Dearmont, Boyce, Va.

SHELTERING ARMS HOSPITAL, *Paint Creek, W. Va.*—Dr. B. L. Traynham, Portsmouth, Va.; *Alternate*, Dr. J. S. Burger, Farmville.

SHELTERING ARMS HOSPITAL, *Richmond, Va.*—Dr. H. W. Lewis, Culpeper, Va.; *Alternate*, Dr. J. C. Giles, Chatham, Va.

SARAH LEIGH HOSPITAL, *Norfolk, Va.*—Dr. T. H. Johnson, Radford, Va.; *Alternate*, Dr. B. H. Gilmer, Island Ford, Va.

VIRGINIA HOME FOR INCURABLES, *Richmond, Va.*—Dr. Geo. A. Wright, Poplar Hill, Va.; *Alternate*, Dr. I. K. Briggs, Briggs, Va.

The degree of *Doctor of Dental Surgery* was conferred on the following: Phares W. Calliham, Shreveport, La.; Courtney Edmond, Millboro, Va.; J. Segar Epes, Jr., Blackstone, Va.; George Hayden, Nottoway C. H., Va.; R. Edward Lee Miller, Lincoln, Va.; Lewis DuVal Pilcher, Petersburg, Va.; Walter S. Quaintance, Slate Mills, Va.; Jacob A. Richard, Bliss, Va.; Frank B. Stephens, Ft. White, Fla.; Wm. Allison Stores, Portsmouth, Va.

Diplomas were awarded the following named *Graduates of Pharmacy*: Messrs. Myron J. Browning, Charleston, W. Va.; Ellis P. Carder, Bedford City, Va.; Wood Bowyer Carper, Newport News, Va.; Floyd N. Kerr, Luray, Va.; Clyde Wooley Taylor, Norfolk, Va.; Elam C. Toone, Richmond, Va.

The degree of *Bachelor of Pharmacy* was conferred on Messrs. S. L. Carter, Clifton Forge, Va.; Rea Blackwell Parker, Como, N. C., and Clyde Eby Walton, Woodstock, Va.

The exercises for the evening were concluded by an enjoyable banquet at the Westmoreland Club.

The Alumni Association of the University College of Medicine, Richmond, Va.,

Held their 10th annual meeting Wednesday night, May 13th, at the college building. The address was delivered by Dr. Lowndes Peple, on "Enlarged Prostate."

The following officers were elected for the ensuing year: President, Dr. George A. Stover, South Boston, Va.; Vice-Presidents, Drs. William D. Willis, Richmond; Mr. E. L. Brandis, Richmond; Secretary and Treasury, Dr. Roshier W. Miller, Barton Heights; Essayist for next year, Dr. Wm. H. Parker, of Richmond.

Dr. J. C. Boyd, medical inspector in the United States Navy, was present, and called the attention of the graduates to the claims of the medical service of the United States Navy.

Dr. Henry L. Taylor, director of the Board of Regents of the University of the State of New York, explained the plan of work of the board, and referred to the rapid advancement in professional education. It is understood that Dr. Taylor, after a personal inspection of the University College and its courses of study in the various departments, stated that the University College of Medicine will be fully registered in New York State by the Board of Regents of that State, and that immediately on his return he will notify the faculty officially of this recognition by the Board of Regents.

Medical College of Virginia.

The following were the *Graduates in Medicine* at the commencement exercises of this institution May 12, 1903: William Harrison Boyce, Henry Bernard Bristow, James Semple Cahill, Claude C. Coleman, Thomas Grier Cook, Edward Cummings, Oscar Carroll Daniels, Job Worth Davis, John Adams Drake, Jr., John Sidney Harrison, Rob Roy Hoskins, William Harrison Howard, Jones Ross Hunter, Thomas Clarence Johnson, Harry Kellam, Henry Garnett Latimer, Herbert Mann, Roy Benson Miller, Lucius Daniel Morgan, James Robertson Pharr, Joseph Alfred Pilout, Lawrence Taylor Price, Jesse Parker Rex, Claude Nelson Rucker, John Bonney Shipp, Edward Dabney Starke, Harry Benjamin Stone, William Joshua Sturgis, Charles Walter Thomas, Edwin Olin Thornhill, Daniel Trigg, Jr., Charles Wiley Tucker, Walter Edwin Walker, Elbert Patton Whited, Eugene Young Willis.

The degree of *Doctor of Dental Surgery* was conferred on the following: Benjamin Thomas Blackwell, James Semple Cahill, Rufus Pierce Copenhaver, William Guy Delp, Thomas Seattle Goss, Frank Bacon Hart, Richard Fuller Hilliard, Frank Elton Perkins, Asbury Glenn Pless, Robert Latham Spencer. Mr. James M. Lewis also passed examinations, but diploma cannot be awarded until he is twenty-one years of age.

Graduates in Pharmacy: Charles Frederick Gladstone, Preston Hundley, Cecil Clyde Martin, Early Norris Moorman, James Russell Porter.

Hospital Appointments: Old Dominion Hospital, Drs. Herbert Mann and W. E. Walker; Retreat for the Sick, Dr. L. T. Price; City Almshouse, Dr. Jesse P. Rex; St. Vincent's Hospital, Norfolk, Va., Dr. J. R. Hunter; Norfolk Protestant Hospital, Norfolk, Va., Dr. W. H. Boyce; Newport News Hospital, Newport News, Va., Dr. T. C. Johnson.

Memorial to Dr. Walter Reed.

During the sixth triennial session of the Congress of American Physicians and Surgeons, convened in Washington, D. C., May 12-15, 1903, the president, Dr. Wm. W. Keen, of Philadelphia, announced that a committee had been appointed to take charge of the project of erecting a memorial in Washington city to the late Dr. Walter Reed, of the Medical Depart-

ment U. S. Army, whose widely published experiments and observations proved that mosquitoes are the transmitters of the infection of yellow fever. It is proposed to raise at least \$20,000 for the memorial. It will be recalled that Dr. Reed was a Virginian, and a graduate of the Medical Department of the University of Virginia.

The Memorial Hospital, Richmond, Va.

Will formally open about June 1, 1903. The management is vested in a board of trustees, with a medical and surgical staff of about a dozen doctors. There will be 148 beds for patients, including 48 rooms for private patients. The equipments will be all modern. It is an imposing structure, at the corner of Broad and Twelfth streets.

The Medical Examining Board of Virginia

Will hold its session for the examination and licensing of all new comers into the State who propose to practice medicine, etc., in Virginia in the Hall of the House of Delegates, Richmond, Va., June 23-25, 1903. A meeting of the Board itself to arrange questions, etc., will be held Monday night, June 22d. "Applicants must be present from the beginning of the first examination," which will begin punctually at 9 A. M., Tuesday, June 23, 1903. We are simply repeating a part of the advertisement on the fourth cover page of this issue, to which we would especially call the attention of all interested.

The International Executive Committee of the Pan-American Medical Congress

Have decided to accept the proposal of Argentine Republic, to hold the fourth Pan-American Medical Congress in Buenos Ayres in 1905, instead of June of 1903, as was announced in their invitation of February, 1901.

The meeting of the American Medical Association at New Orleans, and of the Congress of Physicians and Surgeons in Washington would, no doubt, prevent a number of physicians of this country from attending, while the meeting of the International Medical Congress in Madrid would probably attract many from the Spanish-American countries, who would otherwise be disposed to take an active interest in it. The change of date, therefore, was considered as much more favorable for a large attendance in 1905.

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MASTOID PAIN NOT DUE TO EMPYEMA OR OSTEITIS OF THE MASTOID CELLS, NOR TO SCLEROSIS OF THE MASTOID PRO- CESS.*

By JOHN DUNN, M. A., M. D., Richmond, Va.,

Professor of Otology and Laryngology and Associate Professor of
Ophthalmology, University College of Medicine.

Otology has done for the mastoid process what abdominal surgery has done for the right inguinal region, and to-day severe pain behind the ear suggests to the average sufferer and his friends the possibility of postaural section as surely as severe pain in the belly brings to their mind's eye the picture of an appendix ready for the knife.

The postnasal space, the Eustachian tube, the middle ear, the mastoid antrum, the mastoid cells are but links of one chain. The careful physician knowing that the link next to the invisible antrum is the visible middle ear cavity, asks first of all, in every case of postaural pain, what is the condition of the middle ear. And in inflammatory conditions of the mastoid astrum and cells, it rarely happens that the middle ear fails to furnish valuable suggestive information. It is, however, not to acute inflammatory conditions of the mastoid region following upon, or coincident with, catarrhal or infectious changes in the middle ear cavity, that I would ask your attention this evening, nor is it to those not infrequent cases where sclerosing processes affecting the mastoid cells bring about intractable neuralgia. It has been my fortune to have seen during the past winter some half dozen or so cases where either the patient's physician fully expected me to "open the mastoid" for the relief of the severe pain present, both subjectively and on pressure in the mastoid region, and yet they were cases where no operative measures were indicated. I

cannot do better than report, as briefly as possible, the existing symptoms in some of these cases:

Mr. A., aged 32 or 33, had, when I first saw him, been suffering for several days excruciating pain in the mastoid region. We had but to look in Mr. A.'s face to get some idea of what he was undergoing. He carried his hand to the side of his head as though to shield it from the ungentle winds of heaven, his head over toward his shoulder as though some heavy weight were dragging it down. The pain had slight remissions, although it never entirely subsided. There was no history of a head cold. The patient's chart revealed for the greater part of the day slight elevation of temperature. The pulse showed nothing abnormal, nor did the tongue. The hearing and ear drum in the affected side were normal. The throat conditions threw no light on the cause of the pain. The Eustachian tube was open. The mastoid region, normal in appearance, was very sensitive to pressure. The patient asked me if I thought this pain might in any way be due to syphilis. He had, years before, had a sore on his penis, the nature of which had been the subject of dispute among his physicians. No after symptoms had appeared. I admitted the possibility, and while waiting for developments, prescribed the iodide of potash. There were no developments. The severe pain gradually grew less and in three or four days had entirely disappeared. A few months later the gentleman again consulted me, this time in regard to his throat, which was the seat of extensive late syphilitic ulcerations.

The next case was that of a young negro woman who for four weeks had suffered tortures with pain behind the ear. Here again, at the time of examination, the throat, the Eustachian tube and hearing were normal. The drum membrane was normal, save for a faint blush in the upper part. There was no history

*Read before the Richmond Academy of Medicine and Surgery, April 28, 1903. Dr. Mark W. Peyser, reporter.

of a sore throat or head cold. There was no decayed tooth, and this point I have thought worthy of mention here, inasmuch as among the negroes reflex otalgia is common and apparently, as a rule, much severer than among the whites. This pain is referred to the ear, and not the mastoid region. I have, however, seen reflex mastoid pain having as its source osteitis of the angle of the inferior maxilla. In the case in question, the pain behind the ear had come on at night about four weeks previous to her visit to me. There was, at the time I first saw her, no remission of pain day or night. The mastoid region, though normal in appearance, was so sensitive that the patient would not willingly submit to the slightest pressure over its surface. She said there was a constant "zuzuing" in her ear. "When any one speaks to me it looks like I am way off from him. It looks like I am away off from myself when I speak, and no matter how easy I talk, it seems loud enough to be heard all out of doors. My hearing on this side is at times not good; at other times it is all right." The patient's voice was that of a person whose palate is paralyzed. As in Case 1, there was a slight elevation of temperature, without, however, demonstrable quickening of the pulse or any evidence of systemic infection. This case, also, was entirely relieved in a few days under the administration of the iodide of potash. The palatal voice disappeared.

That we had in these two cases to deal with gumma of the mastoid, there can be little doubt, the pain being comparable to the severe pain of the syphilitic gumma of the meninges.

One who has given much attention to the details of mastoid disease always suspects at first glance, in cases of intractable mastoid neuralgia unattended by marked febrile disturbance or purulent discharge from the middle ear, some form of sclerosis of the process, provided the history of the case tells of repeated attacks of middle ear inflammation, or examination of the drum membrane shows extensive destructive changes. This sclerosing process, whether it result in complete eburnation or complete vacuization of the mastoid cell region, is but an evidence that the vitality of this region has been hard hit. Where, however, the drum membrane is normal, the hearing normal, where there has been no history of recurrent middle ear trouble, the careful aurist in the presence of mere pain of the mastoid, no matter how severe, rightly

tries other measures and tries hard to find the cause before he advises an operation.

The next two cases had symptoms so similar they may be considered together. In both the pain was caused by la grippe. Both patients were young. Both I was requested to examine to see if mastoid disease was not the cause of the severe constant pain and tenderness in the postaural region. In Cases 1 and 2 the surface of the mastoid itself was hyper-sensitive on pressure. In Cases 3 and 4 the pain, although referred by the patient to the region back of the ear, was found to be evoked only when the region along the posterior part of the upper insertion of the sterno-cleido-mastoid was pressed upon. In both of these cases the temperature curves were erratic, showing at times several degrees of fever; in both there were throat and nose symptoms; in both the pain behind the ear was severe and did yield to external applications; in both it had continued several days before I saw the patients. In neither case was there any visible evidence of middle ear inflammation, the ear drums in both cases being normal in appearance and the hearing normal. The point of greatest pain on pressure was just over the exit of the mastoid vein, along the posterior border of the process.

The first two cases had what might well be called the "mastoid expression," so commonly is it seen in cases of osteitis acuta of the mastoid process—that it is to say, of mastoiditis commonly so-called. In neither of the latter cases was there present this expression which is made up of facial expression, position of the head and body. I cannot put it into words, but it is sufficiently characteristic for one who has seen it several times to be able thereafter to suspect the nature of the trouble before he examines carefully either the middle ear or the mastoid region. In examining these last two cases, I noticed that on moving the patients' heads they would sometimes complain of a sharp, sickening pain in the shoulder or in the clavicular region. I at once suspected the postmastoid pain was part of an affection similar to the common "crick in the neck," and that it was but one of the little figures in the kaleidoscopic picture la grippe offers for the entertainment of us medical folk. In both cases the pain disappeared along with the general trouble.

These two cases are worthy of a moment's further consideration. Suppose there had been, in addition to these symptoms, a purulent mid-

dle ear inflammation. Every indication for opening the mastoid would have been present—fever, evidences on the tongue and in the breath of systemic infection, tenderness on pressure, a running ear, severe, constant, unyielding, subjective pain. Indeed, we might well have suspected involvement of the sinus, considering the erratic fever curve and the point of greatest tenderness on pressure. And I believe that it has sometimes happened that in just such cases the mastoid has been opened, and, to the surprise of the operator, nothing found to explain the symptoms. In just such cases as these, I have no doubt, operation has, from time to time, been advised, the patient and his friends have been told that an operation offered the only hope of a cure—no operation was, however, permitted. The patient got well, and the specialist's word was ever afterwards subject to a discount by patient and family.

The next two cases were both sent to me for operation. Both had cervical *tic douloureux*, an affection as excruciatingly painful as its first cousin, tic of the fifth nerve. Both occurred in old people—one in a lady 62, the other in a negro man 75 years of age. The former case had existed for three weeks when I first saw her, and it is not at all unlikely that her physician would have recognized the nature of the trouble had he not been so ill at the time that he should have been in bed and not going about attending to his work. As it was, the patient brought me a note which merely said, "Some mastoid trouble. I fear she needs operation." Her history is as follows: Early one morning about three weeks previous to her visit to my office, the patient noticed a soreness, both spontaneously and to the touch, of the left auricle, more especially along the helix. About a week later a pain comparable to that of a severe "crick" in the left side of the neck and left shoulder and left side of the head from the vertex downwards. This pain had been constantly present since, varying, however, in intensity, being paroxysmally much worse from 5 o'clock in the afternoon until 5 o'clock the next morning. When I first saw Mrs. L. the whole mastoid region was excessively sensitive to the touch. At times, the pain seemed to center in the upper portion of the mastoid region, and then the patient would suffer excruciatingly. Examination showed a normal temperature, normal pulse, normal hearing and middle ear, normal external coverings of the

mastoid—no history of old middle ear trouble. Furthermore, careful palpation of the mastoid region revealed spots where the pain on pressure was greater than at other places, suggesting the nerve branch origin of this pain. One or two similar spots were found on the side of the head away from the temporal bone. At times—I found on questioning—the pain was as great in the left side of the chest and shoulder as in the side of the head. Morphine had failed to give patient more than slight temporary comfort. Salicylate of soda, in frequently repeated doses, in a few days afforded entire relief. Whether there has been any recurrence I do not know.

The second case—that of the negro man aged 75—came to the Eye Infirmary from one of the counties in the State. This case, though sent to me by mistake of the patient, was referred to Dr. White, and thus I had the opportunity of examining it. From the patient's account, the pain began a year before, and now there were "three kinds of pain in the ear—one sittin' like a loop of red-hot iron right around the rim of the ear"; the second came "right up out of the hole of the ear," and the third is "right here," pointing to the mastoid region. As you watched the patient paroxysm after paroxysm would come into the side of the old fellow's head and he would double up in agony. The pain, according to his account, made its appearance, as in the case of Mrs. L., first in the helix. It gradually grew worse, until now the whole right side of the body, also arm and leg at times, took part in the paroxysms. One interesting fact was visible in connection with the case. The region of the helix, anti-helix and scaphoid fossa was thickened until it was two or three times the size of the corresponding region of the opposite ear. It suggested the othæmatous thickening we sometimes see. The old man's mind was not altogether well balanced, and a more definite history could not be obtained at one time. He said the left ear had been frostbitten some twenty years ago; at another time he would deny this. The case, however, is interesting as an example of cervical tic in which the severest pain centered about the mastoid region. In this case, as in the others, the hearing and mastoid appeared normal. The drum membrane was apparently thickened.

The pain in the mastoid, which at times we find accompanying diffuse or localized otitis externa, all aurists are familiar with. At times

these cases keep, for the moment, the question open as to whether or not we have to do with a complicating mastoid inflammation. For example: Miss A. has a chronic otitis externa, accompanied by a free discharge, while the closed condition of the canal prevents examination of its deeper portions. A furuncle forms, the inflammatory swelling caused by which spreads to the tissues over the mastoid. The skin gets edematous. The patient becomes delirious from the pain. If now the physician be called in for the first time, and is able to get from the patient's mother only the facts that "the ear has been discharging for a long time offensive matter, and that this morning she got delirious," a complete and satisfying diagnosis cannot be made at the moment. Fortunately, the history of the case and the conditions present rarely fail to make clear the nature and extent of the trouble.

I merely mentioned this class of cases as introductory to the case of Miss B., whose mastoid was, for a long time, a source of many failures on my part to furnish relief. Miss B. is an anæmic, poorly nourished, sensitive, partially deaf old maid. She had pain in her mastoid for months—not an excruciating pain, but pain enough to be the source of considerable discomfort to her and her physician. The deafness was due to a slowly progressing otitis insidiosa, which, as one of its accompaniments, had a thickening of the skin, including periosteum, of the external auditory canal, referred by her to the mastoid.

Of course, it is possible we may be dealing with a sclerotic form of mastoiditis, and the pain may be situated in the antrum, whose lining membrane is undergoing the same changes as are to be found in the membrane of the middle ear, changes sufficiently pronounced in this case to be the cause of the neuralgia; changes which, in another and healthier person, would amount to nothing more than a vague sensation of discomfort. I do not think so, however, for though the pain be referred by Miss B. to the mastoid, it can be increased by slight pressure on the skin of the posterior half of the external canal, especially in its deeper portions. As Miss B.'s health improves, the mastoid pain grows less, and, at times, almost disappears; during the slightest ill health the pain increases. Again, in this case, the pain may be hysterical in character. Several interesting cases have been reported where the mas-

toid has been opened for the relief of severe pain which yielded to no remedies that were tried, and as these cases were mostly in young women, and as the operation itself afforded no relief, they were denominated hysterical.

I must mention here, if only by way of parenthesis, an affection at times carelessly attributed to the mastoid as its source, an affection often as painful as obstinate. I have reference to rheumatism of the atlanto-axidian capsular ligaments. Careful examination will always reveal the location of the trouble; the history of the case will suggest its nature.

And now, although I have by no means exhausted the subject, having left untouched many sources of mastoid pain and many interesting questions pertaining thereto, I have come to the end of the chapter. The above cases are worthy of report, if for nothing else, for that they show the mastoid has other noteworthy problems to offer the physician than those pertaining to bone changes therein, and that mastoid pain does not always call for mastoid section.

314 East Franklin street.

DISCUSSION.

Dr. J. A. White said that he had met with pain about the ear, both recurring and persistent, without any symptoms whatsoever indicating local aural trouble, the pain being sometimes purely subjective, with no pain on pressure. He had met with pain again where there had been an old suppurative disease of the ear which had been cured, and still there was pain referable to the mastoid without any sign of recurrence of the aural trouble. In some of these cases the pain was purely subjective. Again, he had met it even in cases where the mastoid had previously been removed.

Now, in many of these cases the pain was the only symptom, as it was often present without any discharge from the ear, without any inflammation and with no satisfactory explanation for it. It might be gouty, rheumatic, malarial, reflex from some distant point of irritation or hysterical.

He quoted a case of Hall to show the difficulties in the way of being satisfied about the necessity for operating, although numbers of cases have been operated on merely to relieve pain. He, himself, however, had operated on but two for this purpose, and in both he found more or less exostosis of the bone, as was usually found in such cases. The mere removal

of the cortex was generally sufficient to get rid of the discomfort, although in most cases it was better to remove the antrum and tip as well, so as to leave no room for doubt about the result. In many cases, however, we could be sure whether we should operate or not, and he, therefore, advocated conservatism in mastoid operations. Even though the statement might truthfully be made that an exploratory mastoid examination had no more attendant risks than an exploratory laparotomy, and whilst an exploratory mastoid operation was perfectly justifiable at times, we have to be very careful in this community, because a surgeon would be blamed if a mastoid operation was performed for mere diagnostic purposes, especially if any trouble resulted from it. For example, he recalled a case in which there was an intermittent discharge followed by violent pain whenever the discharge ceased—that is, as long as the discharge continued there was no pain, and as soon as it stopped there was violent pain over the mastoid. After several such recurrences the mastoid operation was done, showing an absolutely healthy mastoid in every particular, not even eburnation of the bone—the antrum, the tip and all the other cells being perfectly healthy, and yet this was a case that any one would decide to operate upon, although the operation was proven unnecessary, and it showed how uncertain, at times, were the indications for surgical intervention.

Many cases of *apparent* mastoiditis recovered without any operation and numbers of cases of *real* mastoid trouble recovered without operation. He had advised the operation, had it refused, and the patient got well any how. This has made him more conservative still. Hot douching, free purgation, the use of mercury and pyro-phosphate of soda sometimes did wonders in these cases.

When there was discharge and the microscopic examination showed pneumococci with any symptoms of mastoid involvement, such as pain, sagging of the upper posterior wall of the external passage next to the drum, and so on, the operation should undoubtedly be done. Where the micro-organisms were not more virulent than the staphylococcus pyogenes albus, the operation could be deferred for more alarming symptoms. Of course, later symptoms, such as œdema, rigors, vomiting, vertigo, choked disc, sudden changes of temperature, facial paralysis, uneven pupils, dull mental state, the

so-called typhoid condition and paralysis meant trouble in the lateral sinus, dura, cerebrum or cerebellum, and the presence of any of them would call for very prompt operative intervention.

He was satisfied that proportionately acute cases of otorrhœa brought more patients to the operating table than chronic ones, and this would be demonstrated if specialist saw the acute cases; but, of course, they see comparatively very few of them, and their greatest experience was necessarily in chronic cases. He had not had any very great experience with cerebral complications except of the milder forms. He had operated on a number of cases of epidural abscess, and it was astonishing how long patients could have this condition without cerebral symptoms. He had operated on but two cases of cerebral abscess, and both died. In old chronic cases, where there was a foul smell, caries or necrosis of the drum cavity, a radical operation should always be performed, provided ossiclectomy and curettement of the tympanic cavity did not give relief. He was opposed to the radical operation until everything else had been tried, because it frequently happened that after the operation the hearing was permanently injured, whereas it was sometimes astonishing how it was improved by ossiclectomy and curettement.

Dr. John Dunn said the terms caries and necrosis were too loosely used when describing the bone changes occurring in the course of mastoiditis. As a rule, these changes were the result of osteitis with granulation formation and softening. Necrosis, with separation of the dead bone, occurred only infrequently, and then, as a rule, in young children before the different parts of the mastoid have become firmly welded together. In most of these cases the inflammation had been severe, and the necrosis had been the result of shutting off the blood supply to the affected part. In one case—that of a child—he had removed, through an incision back of the ear, the whole of the petrous portion of the temporal bone. No dissection had been necessary. The necrosed petrous bone had merely been seized with a pair of forceps and lifted out of its bed of pus. That it should have come thus readily away was remarkable, when we considered the course of the carotid canal. This case recovered with only a facial paralysis to tell the story. In another case—that of a 6-year-old child—he had removed a

piece of necrosed bone too large to be drawn through the external meatus. Nature had separated this piece of bone from the process and had built a healthy membrane between it and the remaining mastoid. Although in this case there had been a profuse stinking discharge for three or more years from the ear, and there were numerous sinuses about the ear, the parts healed and the discharge ceased entirely within a few days after the removal of the necrosed bone. That most of the cases where, following middle ear inflammation, mastoiditis had occurred and recovery had followed without operative intervention, empyema of the antrum and some of the cells had been the cause of the symptoms; that where the disease had progressed a step further and osteitis had set in, he was inclined to think very few got well without operation. Certainly operation was the proper treatment. Where the softening took place inwardly—*i. e.*, next the sinus—perisinus abscess formed.

Dr. Clifton M. Miller said that the general practitioner was responsible for many cases of ear trouble. Especially was this true in the exanthematous diseases where there were throat symptoms, a fine nidus for infection through the Eustachian tube being formed. If the nose and mouth were kept clean, drainage would occur and no nidus be formed. Regarding early incision of the drum in acute middle ear suppuration, he thought Dr. White was somewhat at variance with the last report as to the danger from the presence of the various bacteria. Where pneumococci alone were present there were 90 per cent. of recoveries without operation. With streptococci, 14 per cent. recovered without operation; staphylococcus, 33 $\frac{1}{3}$; mixed, with streptococcus, 8 per cent.; mixed, no streptococcus, 66 $\frac{2}{3}$ per cent. These statistics were given by Dench and Cunningham. No operation should be performed on the mastoid unless the surgeon was prepared for every emergency, for no two cases alike came to the table. Swann Burnett, of Washington, reported that he had never seen a case of mastoiditis in a negro. Dr. Miller had. In conclusion, he urged that the trocar and canula be not used for exploring brain abscess, as it was liable to shove aside the cyst wall and do injury. He favored a sharp, narrow blade.

Nathing promotes good feeling more than to speak kindly of fellow-physicians.

LACERATION OF THE BOWEL WITHOUT EXTERNAL EVIDENCE OF INJURY—REPORT OF A CASE, WITH REMARKS ON DIAGNOSIS.*

By E. B. CLAYBROOK, M. D., Cumberland, Md.

In this day of hurry and bustle, steam and electricity, and rapid transit of various descriptions, hardly a day passes that we do not pick up a newspaper and find a list of killed and wounded, due to some fearful accident. And how often in the list do we see a man's name followed by the fateful words, "Injured internally; will die"? This subject of internal injury is deserving of our best attention and the closest study, for only by a close study of all internally injured cases and better diagnosis can we, as surgeons, live down this time-honored phrase of "Injured internally; will die." In the past the evil prognostication of the reporter has, as a rule, been fulfilled in short order, and I believe that it is a stain upon the fair name of surgery that it is so.

I was called soon after midnight, October 6, 1902, to see an injured railroad brakeman. I found the man on a stretcher in the superintendent's office surrounded by the usual crowd, who gave the following history: He was standing on the step of a yard engine ready to make a coupling to a coach. When the engine and car came together the couplers slipped past each other and the bumpers caught the man through the back and abdomen. When released he walked fifty yards and was then placed on the stretcher. He was stout and muscular, 21 years old and said he was not hurt to amount to anything; pulse 72, but high as regards the tracing it would have made, and the beat was not well sustained—no shock, slightly pale and complained of pain in the abdomen; no vomiting.

On examination there was not the slightest bruise or abrasion of the skin on the abdomen or back. The abdominal muscles were very rigid and tenderness was marked. On examination with the stethoscope there was complete arrest of peristalsis and the heart and respiratory sounds could be easily heard as low down as the hypogastrium.

A diagnosis of rupture of the stomach or bowel was made, and he was promptly removed to the hospital and the abdomen opened, the operation being begun about three hours from the time of injury. Incision was made in

*Read before the Medico-Chirurgical Faculty of Maryland, April, 1903.

medium line, from the center of the epigastrium past the navel. On opening the peritoneum about a quart of blood escaped. In overhauling the bowel to search for the rent a free end appeared at the opening with bilious matter escaping from the torn end. The tear occurred at the duodeno-jejunal junction, and the mesentery was torn through to the base and two branches of the mesenteric artery were found spurting, one of them so strongly as to soil the dress of a nurse standing near the foot of the table.

The ends of the bowel were trimmed and anastomosed with interrupted Czerny-Lembert sutures and the rent in the mesentery with continuous sutures; and after thorough flushing, the abdomen was closed without drainage.

The course was uneventful and convalescence rapid. He took liquid food by the mouth on the third day, and at no time was his temperature above 100° F. He walked from the hospital, a half mile, to his home on the nineteenth day and in two months resumed his duties as a brakeman on the road.

This kind of injury is so common that I have seen forty-two cases reviewed in our current journals within the last five months.

In one of the German journals for October, 1902, Neumann, of Berlin, reported a case of rupture of the duodenum from a fall across a barrel, with operation in six hours, followed by recovery. He reviews the literature and finds twenty-two cases—fifteen of which were operated on in from a few hours to three days, and seven of which the diagnosis was only made *post-mortem*. They all died. He concludes that there are no pathognomonic symptoms of rupture, but that most reliance is to be placed on the "board-like hardness of the abdomen."

In the *Boston Med. and Surg. Jour.* for November 27, 1902, Nichol and Bottomley report six cases operated on early, with four recoveries. They conclude that the time of operation after the injury is the vital point and that every moment's delay after the fifth hour lessens the chance of recovery.

Brewer, of New York, in the *Annals of Surgery*, for February, 1903, reports two cases of rupture of the intestine with two deaths, two of ruptured liver with two deaths, two of rupture of spleen with one death, and one each of ruptured kidney, bladder and ureter, the last proving fatal. He lays stress on three symptoms in diagnosis—pain, rigidity and tenderness.

Robert LeConte, of Philadelphia, in the April *Annals of Surgery*, reviews five cases occurring in his own and others' practice, with three deaths. He concludes that unless we have certain evidence of perforation we should wait for reaction from shock before operation. He relies upon the facies, thoracic respiration, gradually increasing rigidity with abdominal pain radiating to the back and sides, vomiting after shock has ceased, distension, increasing pulse rate and secondary fall of temperature.

In the *Railway Surgeon* for November, 1902, there was a summary of five cases, in all of which the diagnosis was only made *post-mortem*. One of these, occurring in the practice of the editor, is worthy of note here: A boy lifted a small derrick from an express wagon. It tipped and fell across his abdomen. This occurred about 4 P. M., and was not followed by pain or shock. He went to bed, as usual, and was found dead in bed the next morning. *Post-mortem* revealed complete rupture of the bowel at the duodeno-jejunal junction with large hemorrhage.

We thus see from this slight review of only a few of our current journals within the last six months that this form of injury is of quite frequent occurrence and that if an early diagnosis is not made death is certain and speedy. That we need to be careful in our examinations and diagnosis of these cases is amply proven by the fact that of the forty-two cases noted only eight recovered; and the diagnosis was only made at the *post-mortem* in over one-third of the cases. In fully one-third of them the diagnosis was made so late that the chances of recovery after operation was absolutely nil. This leaves about twelve cases in which the diagnosis and treatment were prompt, with eight recoveries, or a mortality of 33½ per cent.

The question of life or death in these cases hinges on the diagnosis. If it is made early and followed promptly by operation, I believe we could cut the mortality down as low as it is for any other grave abdominal lesion not accompanied by pus.

The question, *What symptoms can we rely upon as a basis of diagnosis* in these cases? The list, as summarized by some of the writers, contains symptoms that do not, or cannot, appear until some hours, or even days, have elapsed, while clearly only those that supervene almost immediately are of any service to us if we are going to save the patient.

There are *two early symptoms* that I have

not seen mentioned by any of the writers that show up at once, and to which I wish to call especial attention, as I believe them to be of great aid in diagnosis. They are:

1. Complete absence of peristalsis, as revealed by the phonendoscope. I have noted this symptom in several cases, and if it is present I think it is an almost positive indication of rupture, though its absence does not necessarily mean that there is no rupture.

2. The transmission of the heart and respiratory sounds, so as to be audible over the whole abdomen, at times even as low as the hypogastrium. I do not know the mechanics that enter into this, but I have noted it on several occasions and have never found it present unless there was rupture of hollow organs.

These two symptoms, with pain, marked tenderness and rigidity, at times so intense as to produce a board-like hardness—a rigidity involving the abdomen as a whole and not localized—thoracic respiration and history of contusion of the abdomen are, I think, sufficient to justify a diagnosis of rupture with reasonable certainty.

The presence or absence of shock cannot be relied upon, as it is often absent in the worst cases until hemorrhage has produced it, and it is at times profound after a simple contusion of the abdominal wall. The characteristic facies is not an early symptom. I do not think we ever see it until peritonitis has begun to develop, and we should not wait for it. Vomiting may, or may not, be present, and if present it does not indicate serious trouble, except the late and persistent form, which if we wait to see will most probably prove the forerunner of a funeral. The pulse is variable and cannot be relied upon for early diagnosis, because it may be quite good for a considerable time after a severe laceration with profuse hemorrhage, as noted in the case here reported, and then fail so rapidly as to cause death before anything can be done to repair the damage. Operation begun with a rapidly failing pulse is almost certain to end in disaster. Likewise distension should never be classed as one of the aids to diagnosis, for it seldom occurs early, but generally develops *pari passu* with the accompanying peritonitis. Loss of liver dullness I have never found in the cases I have seen, nor do I think it can occur early enough to be of any value in diagnosis, unless we are satisfied with a diagnosis only. If that be our sole aim,

then why not wait and make it absolutely certain on the *post-mortem* table, as in the cases referred to above?

So, then, I say, if we have a patient with a history of contusion of the abdomen, suffering pain, with marked tenderness and rigidity, thoracic respiration, absence of peristalsis and transmission of heart and respiratory sounds to the abdomen, with or without rapid pulse, with or without shock, with or without abdominal facies, with or without vomiting, with or without distension—then ought we to lose no time in confirming our diagnosis by exploratory laparotomy and deal with the conditions present as the findings demand. Opening the abdomen in these cases, if properly done, does not increase, but diminishes the danger, and we *never know* what is inside an abdomen until we see it. We had better by far open half a dozen too many than one too few.

The treatment needs no discussion here, for I believe this is one condition, at least, that is allowed to be solely in the field of surgery, and is not claimed to be cured by internal medicine.

THE DIAGNOSTIC VALUE OF TUBERCULIN IN ORTHOPAEDIC SURGERY.*

By W. S. BAER, M. D., Baltimore, Md.,
Instructor in Orthopaedic Surgery at the Johns Hopkins Hospital;

—AND—

HENRY W. KENNARD, M. D., Baltimore, Md.,
Assistant in Orthopaedic Surgery at the Johns Hopkins Hospital
Dispensary.

Koch, in 1890, described in tuberculin an agent with a definite diagnostic and therapeutic value where tuberculosis is concerned. In this paper we deal with its diagnostic value in bone and joint tuberculosis. We think that it has no rival to-day as a diagnostic agent in beginning tuberculosis. We are fully convinced that in the proper use of tuberculin we have a perfectly harmless method, simple in its application, which will almost invariably tell us of the presence of tuberculosis long before it would have been detected by any other means, and in the great majority of instances will point out the location of the focus by the local signs.

The tuberculin used by us is that from the

*Original synopsis of paper read during the 105th annual meeting of the Maryland Medical and Chirurgical Faculty at Baltimore, April, 1903.

laboratory of Dr. Trudeau. We have injected at their homes forty cases—from private practice and from the orthopaedic dispensary clinic at the Johns Hopkins Hospital. These cases were selected, almost invariably in order to clear up their diagnoses, to show the ease with which tuberculin may be used in private practice and the accurate results obtained under such circumstances. Twenty-five cases gave a positive and fifteen a negative reaction. The diagnoses thus obtained have been verified by operations and subsequent histories.

As a rule, when tuberculin is given, definite general and local signs are present whenever tuberculosis is present, and generally absent whenever tuberculosis is absent.

The dosage has varied with different observers. It has been our custom, in small children, to give an initial dose of .5 mgm., to be followed at intervals of two days with 2 and 4 mgm., when necessary. In older cases 2 mgm. are used as an initial dose, followed at a like interval by 4 and 6 mgm. as a maximum. In no case have we found it necessary to give more than 6 mgm.

In response to tuberculin, if tuberculosis is present in bone and joint cases, we will have all the local signs of the disease distinctly increased. We have never seen a case in which any permanent damage was done by the tuberculin. Reactions are claimed for syphilis, leprosy, actinomycosis and a few other diseases, but further evidence is necessary to show that there is no associated tuberculosis. In these cases, consequently, we may say that tuberculin is practically a specific in the diagnosis of tuberculosis.

By far the greater number of our patients are among children; the structure of their bones and the relatively large proportion of cartilage in such cases does not lend itself to differentiation by means of radiography, as is the case in adults. It has often been our experience in children that even when the clinical signs were sufficient to make a diagnosis of tuberculosis the best radiograph would fail to present a picture of the disease, or would do it so imperfectly as to make us doubt its existence. In such cases tuberculin would invariably give us both a general and local reaction. On the other hand, tuberculin, plus the radiography, form a combination of diagnostic agents which are of the greatest value.

The reliability and harmlessness of the test

may be judged by the immense number of observations upon cattle, where the results can be verified by autopsies.

CONCLUSIONS.

1. Tuberculin is the best and most reliable diagnostic agent for incipient tuberculosis of bones and joints.

2. Its proper administration is attended by no permanent harmful effects.

3. The dosage is variable, and it is rarely necessary to exceed mgm. 6.

4. The local signs are of equal, if not greater, importance than the general reaction in bone and joint tuberculosis.

5. Tuberculosis practically always reacts to tuberculin.

6. Other diseases than tuberculosis may react to tuberculin, but the evidence is not conclusive.

7. The diagnosis of tuberculosis can be made earlier and with more certainty by means of tuberculin than by radiography.

8. The tuberculin test is applicable to private and dispensary, as well as to hospital practice.

Electric Treatment.—"Electricity in the atmosphere affects your system," said the scientific physician.

"Yes," said the patient, who had paid ten dollars for two visits, "I agree with you; there are times when one feels overcharged."—*Chicago News*.

Daniel's Conc. Tr. Passiflora Incarnata.

In cases of *insomnia*, no other remedy is so quickly beneficial. Its curative properties attack the nerve centers directly, allaying irritation and reducing them to a normal performance of their functions. In addition to its hypnotic properties, it contains a tonic element that, after reconstructing the nervous system, sustains the patient in the period of convalescence. Daniel's Passiflora is a natural narcotic and sedative; it is a production of the maypop, or passion flower, and possesses more nerve food than any other plant known to the medical profession. In nerve disease its efficacy will be promptly established.

TREATMENT OF ANAL AND RECTAL DISEASES WITHOUT GENERAL ANESTHESIA.*

By WM. L. DICKINSON, A. M., M. D., Saginaw, Mich.,

Professor of Rectal Diseases, Saginaw Valley Medical College, etc.

I choose this subject not that it is new, but to emphasize the necessity of not making the mistake of associating the treatment of anal and rectal diseases with the use of general anaesthesia in all cases, and also that I may profit from your discussion and criticism. We are all creatures of habit, and our thoughts and actions are apt to run in certain channels, until it seems nearly impossible to think or do anything out of the old way.

The treatment of anal and rectal diseases has been so long associated with that of general anaesthesia that when a patient presents himself, and we have made an examination, we unconsciously begin to solve the mental problem of how he will take the anaesthetic and the number of days he will be confined to the house after the operation.

To the surgeon there is something exceedingly pleasant in the thought that, by giving an anaesthetic, he can perform his operation in a short time, thereby placing the patient on the road to a perfect recovery.

But what are the feelings of the average patient when he is told that he must take the anaesthetic? We all know that he immediately asks if it cannot be done without the chloroform, and from the expression of his face and the tremor in his voice, we can understand what thoughts are passing through his brain, and the conflict that is going on in his mind. We assure the trembling and frightened patient that it is only a pleasure to gradually lose consciousness of what is occurring about us, and that he ought to be profoundly thankful for this great blessing, chloroform.

How many physicians has it been your good fortune to meet who were willing to submit to general anaesthesia, if there was the least chance of escaping it? I must confess that my experience with physicians has been that they are the most timid patients.

I do not wish to be understood as taking the position that all diseased conditions of the anus and rectum can be successfully dealt with without the aid of general anaesthesia; but I do claim that there are many cases which can be cured, either with or without local anaesthesia, and that

it is our duty as surgeons to give our patients the benefits of the safer method.

We have all had an experience similar to this—viz: A patient comes to us, and having made an examination, we inform him that he can be cured, provided he is willing to have an operation, and that it will be necessary for him to take an anaesthetic. Reluctantly he consents to our proposition and returns home, with the understanding that the operation is to be made as soon as he can be prepared for it. But having talked with his friends, he decides not to take the chloroform, and calls up by telephone and informs us that he has changed his mind, and will not have the operation just at present, as he seems to feel some better. In a few days we learn that the patient has gone to another doctor, and that the other doctor has promised to do what he can for him without the use of chloroform; and we also know that if the patient gets any benefit whatever from the treatment that his influence will always be in favor of the doctor who did not insist upon giving chloroform. We may know that he showed very poor judgment, and was very foolish not to follow our advice and be permanently cured; but, on the other hand, he may know that he feels much better now, and as he did not have to take the chloroform, he will not worry over what may occur in the future.

The time-honored treatment of anal fissure by dilatation, under chloroform, is both effective and speedy; but we can accomplish the same results in a little longer time by painting the fissure with a ten per cent. cocaine solution, and then dilating the sphincters with Pratt's rectal dilators, commencing with the smallest, and increasing to the largest size that the patient can stand at each treatment.

By the forcible dilatation of the sphincters under an anaesthetic, we can usually cure our patient by one treatment, whereas under the gradual dilatation method it may require two or three weeks to accomplish the same result; but when a patient consults us, and we explain the two methods to him, he nearly always chooses the longer method if he can possibly spare the time to make the requisite number of calls at our office. This is quite natural, as every one shrinks from anything called an operation, and readily takes up the treatment that is nearly painless. It is well to paint the fissure with a ten per cent. silver nitrate solution after the dilation. I instruct the patient to return in

*Read before the American Proctologic Society, at New Orleans, May 6, 1903.

three days for another treatment, and to apply to the fissure twice daily, after bathing with hot water, an ointment composed of orthoform gr. xx, ichthyol 5ij, lanolin 3j. Superficial fistula, ischio-rectal abscess, external hæmorrhoids, and many cases of internal hæmorrhoids can be operated upon under filtration just as well as general anaesthesia. Patients will consent to our making these simple operations if we will only not subject them to a general anaesthetic.

Many persons who are now great sufferers from the common diseases of the rectum would gladly have an operation for its relief, if we would only assure them that they could be easily cured, and without the necessity of losing consciousness. We would also make more financially, and keep many a patient from going to some man who perhaps knows little or nothing about the case, but does have a far better knowledge of human nature than we, and also understands the business side of the profession.

I consider it a duty we owe to our patients, and also to ourselves, to do all in our power to keep them from going to the irregular practitioner, for as regular, educated physicians, we ought to be able to cope with all diseases of the rectum in an intelligent manner, and thus give entire satisfaction to our patients.

I have sometimes thought that our teachers make the mistake of holding up too prominently before their students the operative treatment of rectal diseases, thus giving them a false idea of the real work done by the rectal surgeon.

Students do not become familiar with the daily office work, or acquire that ease in examination, diagnosis and treatment essential to the best results. In my opinion, our students should be taught that the greater number of our patients seek our advice and aid for ailments that respond readily to office treatment that can be given without general anaesthesia.

917 Genesee Ave.

Papine, according to Dr. J. D. Albright, Philadelphia, is a preparation of opium from which the narcotic and convulsive elements have been removed, rendering it safe for children as well as the more mature. He has long used papine, and has not yet seen one case in which the habit was formed, nor ever heard a complaint as to its evil after effects. While he has used other remedies he now never gives anything else for after pains, which yield in about half the time required for chlorodyne, viburnum, etc.

CASES OF (1) PUERPERAL INSANITY; (2) POLYURIA FOLLOWING BRAIN INJURY, AND (3) PARALYSIS AND CONVULSIONS YEARS AFTER TRAUMATISM.

By W. J. BREEDING, M. D., Taylors, Tenn.

I have jotted down hurriedly a clinical memorandum of three cases presenting points of especial interest to me.

Case 1. Puerperal Insanity.—According to the family history, this case is parallel to one occurring in the patient's aunt forty years ago.

Mrs. L., mother of nine children; family history good, with the above exception; had never had any serious illness, except that the nausea and vomiting of pregnancy had become more and more distressing with each succeeding pregnancy.

I was called to see her on February 17, 1901, and found her six weeks advanced in pregnancy. She had some nausea, but no vomiting, as before. Temperature normal, pulse normal, uterus in normal position and nothing abnormal could be detected by a very critical examination. She was of the opinion that pregnancy existed, and recalling her hard struggle for existence in a former pregnancy, insisted that she could never live through this one. She begged me most piteously to do an abortion, which I positively refused to do.

I visited her almost daily for five months. She was very communicative for the first few months, though always looking on the dark side of life. Hysteria at this time was the only prominent symptom, insisting that she was in a dying condition. "Smothering spells," "globus hystericus," passing large quantities of straw-colored urine and a whole train of other nervous phenomena would supervene, occurring in paroxysms every twenty-four or forty-eight hours.

As the case advanced she began to refuse nourishment, until finally she stubbornly refused to take it in any form, apparently trying to starve herself. However, it soon developed that, when she thought no one was looking, she would steal to the cupboard and eat ravenously. Insomnia was now a prominent symptom and resisted treatment in a remarkable manner.

While on the border-land between hysteria and insanity she would have the most horrible dreams when a few moments sleep could be secured. These she would always vividly relate to me. From this condition she gradually merged into a state of pronounced melancholia, sitting for hours biting her finger nails and

rarely talking on any subject. Whenever she could be induced to talk the most gloomy mental pictures were drawn. Wars and famines were coming, secret enemies purposed killing them and burning their home, etc. A most intense hatred was cherished towards some of her own children and her most intimate friends.

She was now about four months advanced in pregnancy. This state of mind continued, growing gradually worse, until July 14th, when her husband was taken violently ill. She seemed very much agitated over his condition and a miscarriage resulted. When I reached her she was pulseless and seemed moribund from post-partum hemorrhage. One quart of normal saline solution was used subcutaneously and a hypodermic of strychnia was given. The patient's womb having been duly emptied of its contents, good contraction was secured and re-accion established in two hours.

The seven-months' foetus weighed two pounds. The head was unusually large for size of body, but there was no ossification of the cranium. The extremities were about the size of an ordinary lead pencil and indescribably deformed.

Twelve hours after the delivery the patient talked to me in a very connected and intelligent manner, saying that she felt more natural than she had felt for seven months, and expressed relief that all was over and a belief that she would now recover. Her general health did seem to improve for a few weeks, but her mind soon relapsed into that old melancholic condition, and she wreaked out a miserable existence until the night of November 23d, when she committed suicide by hanging.

The following questions remain with me: (1) Was the pregnancy the cause of the insanity? and (2) was an early artificial abortion justifiable, in that it would have prevented the insanity and her untimely end?

Case 2. Polyuria Following Brain Injury.—Richard F., married; aged 35; laborer in mines and in perfect health. Was unloading hay a year ago last August, when his brother accidentally thrust one prong of a pitchfork into his cranial cavity, piercing the skin just external to the right supraorbital notch. The prong entered the orbit and took a direction upward, backwards and inwards. There was no bleeding from the wound. He walked from barn to house, a distance of fifty yards, and while his clothing was being removed began to have an involuntary patting of left foot and

jerking of muscles of left arm and leg. He soon became unconscious, in which condition he remained with retention of urine for twenty-four hours. There was intense inflammation of right eyeball and conjunctiva, which extended to left eye.

After regaining consciousness he complained of a lancinating pain in left temporal region. The wound was kept open for a few days and allowed to heal, there being no symptoms of infection. He then passed into a typical typhoid condition, so much so that my consultant insisted that we had to deal with a coincident typhoid fever as a complication. These symptoms subsided in nine days, after which he developed a ravenous appetite and a free flow of urine. Since the accident he has gained in flesh from 140 to 190 pounds. His mind is sluggish, he tires easily and is unable to do manual labor. Since the accident he has been voiding from two to three and a half gallons of urine of the specific gravity of water in twenty-four hours.

I have been interested to know what relation the accident could have sustained to the corpulence and polyuria.

Case 3. Paralysis and Convulsions Years After Traumatism.—Dr. E. G. S., my neighbor physician, aged 60, has never used alcoholics, tobacco or other narcotics, having always advocated and practiced temperance in all things. He possessed a well balanced mind and has been a successful practitioner, doing a hard country practice for over thirty years. He was shot through the right lung during the civil war, and about thirty-five years ago he received a horse kick which rendered him unconscious for several hours, fracturing the malar and nasal bones. He does not know whether or not he received a fracture of the cranium, and there are now no irregularities in the contour of the frontal bone that would indicate a former fracture.

I was called to see him in January, 1894. He had been enjoying good health previously, but had suddenly fallen from his chair and was found by the family speechless and prostrate upon the floor. His heart's action was 54 per minute, strong and regular; temperature sub-normal; respiration 18, and pupils dilated. He was lying on his left side, spine flexed to an extreme degree, and body could not be extended except by forcible means. He remained in a comatose condition with involuntary discharges

for over thirty-six hours, after which he began to have a little reactionary temperature, ranging from 100° to 102° for four or five days, gradually regaining his mental equilibrium. In about two months he was able to resume his duties as an active practitioner, with no perceptible bad results, other than slight hemiplegia of right side with some atrophy of muscular structure, causing a slight limp in his gait.

He continued in active practice until June, 1901 (over seven years from date of first attack), when he was again stricken down, but not as before. After lying in a semi-comatose condition for a few hours he would sometimes become very boisterous, affirming that he was not at home and demanding that his wife and children be brought to him, while they were standing by his bedside. Again, he would weep most piteously and insist that his death was inevitable. He seemed to be free from pain, both before and after an attack, but would have insomnia for a few days and vomiting bile before he would fall and become unconscious. Following this condition he would be unusually talkative, being often impeded in his conversation by a failure to supply a word to express his meaning. He had almost a total loss of memory for names and recent events, being unable to recall the names of his own wife and children, while he could at the same time talk coherently of the history of some of the older families and events of the civil war. His field of mental vision would gradually become more clear, but never normal, before he would be stricken down again. These attacks succeeded each other at intervals of two or three weeks for five and a half months. In the interval between attacks his co-ordination was very imperfect. In reaching for an object placed on a table before him he would have to make repeated attempts, and sometimes a failure to even touch it. During some of the latter attacks he would have divergent squint, presenting an alarming countenance, before he would fall and become unconscious.

He accumulated quite a handsome fortune during years of hardships and strict economy and in latter years became decidedly miserly in disposition, his chief topic of conversation being financial affairs. He now has a guardian to look after his affairs. His interval between attacks are much longer than formerly, but his dementia is still very marked.

The symptoms and sequelae of most interest to me, are (1) the divergent squint as a pre-

monitory symptom of an unconscious state, and (2) the loss of memory for events of the past decade and a retention of memory for more ancient events.

RETENTION OF PLACENTA AND COLLAPSE FROM EXCESSIVE HEMORRHAGE AFTER DELIVERY.*

By G. CLINTON MOUTON, M. D., Rayne, La.,

Chairman Board of Health of Rayne, La., and Health Officer, etc.

On February 4, 1903, I was called in great haste for Mrs. L. M. The messenger informed me that she had just given birth to a child and the midwife could not deliver placenta, and she was dying from hemorrhage.

On my arrival I saw at once it was a case of collapse. There was every symptom of great blood loss—deathly pallor, face, hands and feet cold and imperceptible pulse. Found uterus large, and was sure it contained placenta. I first gave ext. ergot. 5j., and grasped firmly the uterus to produce contraction, which came on. Then I made vaginal examination and found the os contracted hard, yet I could feel placenta presenting. Gave immediately tinct. digitalis gtt. xxx, and strychnine sulph. gr. 1-30, properly diluted, in one dose. Let her rest few minutes until medicine would act. She recognized me, and, fortunately, took all medicines when waked up. The only thing that kept her alive was the activity of the respiratory centers, and that was very weak, but still going. We had to rouse her up to give medicines, for she was in deep sleep. Once in awhile she would take a long breath, gape and yawn and look around with a peculiar gaze. After above medicines were given I kept firm pressure over the uterus and saw there was no further hemorrhage.

I waited awhile for some reaction, and ordered hot bricks to be applied to feet, hands and side of body. But reaction was slow in coming, so I commenced at once to manipulate the uterus, after the manner of Crede. By that method I generally succeed in delivery of placenta. But it would not come. I introduced right hand in vagina and with two fingers in os produced dilatation, and with manipulation and firm pressure on fundus uteri with left

*Read before the Louisiana State Medical Society during its session at New Orleans, April, 1903.

hand the placenta slipped through the os into the palm of my hand and was delivered as I withdrew the hand, followed by several large, black clots. I then got the uterus to contract to the size of a cricket ball.

By that time reaction commenced and the patient began to recuperate a little, yet I found her extremities cold and she was too weak. Pulse was feeble, frequent and thready. I then gave her two tablets of nitroglycerin comp. in a tablespoonful of whiskey properly diluted. In cases of extreme weakness and debility generally one of these tablets in a short time will produce a flush and there will be a return of color and some redness in face and lips, but it surely did not come in her case. Yet it did some good, for her condition continued to improve.

In addition to hot bricks I had her rubbed with whiskey, which helped to restore circulation and warmth. It was fully between three and four hours before I could get all extremities warm and ere she began to feel well and comfortable. Each nitroglycerin tablet contained glonoin gr. 1-100, tr. digitalis and tr. strophanthus aa m-jj., tr. belladon. leaves m 1-4. On leaving I ordered one of those to be given every four hours and strychnia sulph. gr. 1-60 every four hours, alternating with the first, so one would come every two hours, and 5 gtts. tinct. digitalis to be given every three or four hours, only in case signs of weak spells should come on. For nourishment, milk, whiskey and beef tea every two or three hours.

In my opinion that was not a case of adherent placenta, but non-contraction of uterus—caused by ignorance—with contraction of os. In my mind the cause of all the trouble—which nearly proved fatal—was the cupidity of the husband in employing an ignorant midwife to do the work that should only be done by a regular physician. My intention was to return next day, but her husband said he would send and report how she was doing. By that I was sure he did not wish a second visit, unless absolutely necessary. Next day he reported she was doing fine and improving. As I had left medicines only for twenty-four hours, I gave him the following prescription:

R—Ext. ergotæ fl.

Tr. nuc. vom.

Tr. ferri. chlor. aa ʒj.

Aq. cinnamoni q. s. ad. ʒvj.

Met. S.—A teaspoonful in little sweetened

water—through tube—three times a day after meals.

I requested him to report if she should have any chill or fever, or if lochial discharges were foul.

Some weeks afterwards I met her brother, who told me her recovery was rapid and perfect.

Had I given hypodermically strychnia sulph. gr. 1-20 or gr. 1-30, I think it would have been better. I wanted to give during the long cold stage 5 grs. of quinine, which was indicated, but her husband said she took it badly, and as there was already some irritation of the stomach, did not give quinine.

RUBBER IN WINDOWING PLASTER CASTS IN COMPOUND FRACTURES.

By HUGH CROUSE, M. D., Victoria, Texas,
President South Texas Medical Association, etc.

The method of using plaster of Paris in immobilizing compound fractures leads frequently to septic results. The frequent changes necessary in order to secure aseptic conditions leads very readily to malposition of the reuniting bone. On account of having met a case of marked septicaemia, resulting from a compound fracture of the tibia, accompanied by excessive laceration and bone fragmentation, the following technique was devised: Dental rubber, known as No. 2, was dissolved in commercial chloroform, sufficient of the latter being used to form a semi-gelatinous paste; absorbent wool was worked into this until a meshed mass resulted. Taking strands of the rubber-laden wool—the plaster cast having been windowed sufficiently to give an inch of healthy uninjured tissue around the entire circumference of the wound, the skin having been previously shaved, sterilized and well dried—layer after layer was rapidly packed by the aid of a dural elevator between the cast and skin until at every point a snug filling existed. Then, by using a plain chloroform solution of the rubber, the entire area was rapidly veneered until a smooth rubber mass, extending from near the wound margin well out on to the cast, existed. The cast was then chalciced. The wound is dressed antiseptically, after being flushed with copious weak antiseptic solutions, the cavity of the wound packed with 5 per cent. iodoform gauze,

as a drain, covered with sterile gauze and cotton, bandaged, and the limb reswung to afford chance of change of position. In some cases, where the wound is extensive, necessitating wide windowing, the cast should be strengthened, not alone by doubling back and forth the plaster bandage, but reinforced with two or three pieces of No. 10 to 12 telephone wire laid lengthwise to the cast.

The exact location of the wound and extent of windowing is indicated by taking a couple of pieces of tin, having them X-jointed, then four other pieces formed so as to slide over the ends, the sliding parts being perforated on the top to permit the passage of a pin. These are all sterilized with the instruments used in the primary dressing of the case.

The limb should be shaved, dusted with boracic acid, covered with absorbent wool (the latter is preferred to cotton on account of its resiliency, despite moisture). The jointed tin strips with their pin-laden sliding pieces are placed, the slides slipped to give the area you desire to cover in windowing and the cast put on with the usual precautions, care being taken alone in allowing the pin point's exit, to secure their aid in locating the amount of healthy space desired about the wound in opening the cast the subsequent day.

After the cast has been cut around the pins, which can indicate a narrow or wide space by simply spreading or closing the X, the strips are caught at the joint, bent and the ends readily removed from under the cast by traction. Silux, a liquid glass, can be used instead of shellac for protecting the cast.

Dr. Hoff, of Ann Arbor, Mich., Professor of Dental Surgery in the University of Michigan, has used rubber for several years in handling compound fractures of the inferior maxillary, windowing on the inside of the mouth.

This technique commends itself in several types of cases outside of compound fractures, such as Anderson's split operation in correcting severed tendons, exsecting of tubercular joints and in any case where immobilization is desired and a wound being present demanding frequent treatment.

In resume, the old method demands frequent changes, endangering each time the position of the reuniting bone; the accumulation of discharges frequently induces skin necrosis and resulting ulcers; the cast readily becomes septic and malodorous; double windowing being de-

manded for counter drainage; a puncture through healthy tissue being forced upon one in order that the tube should have a dependent point for drain. This method is aseptic, permits exact windowing, permits frequent inspection, delivers us from puncturing healthy tissue for counter drain, allows copious flushing—the ideal treatment in septic wounds—permits constant immobilization and is decidedly cosmetic.

Originality is not exactly claimed for this technique; it is simply commended to the medical profession and trial asked by the author of this paper.

ARTIFICIAL FEEDING OF INFANTS. OR CARE OF BOTTLÉ-FED BABIES.*

By HUGH T. NELSON, M. D., Charlottesville, Va.,

Ex-President and Honorary Fellow Medical Society of Virginia;
Ex-Secretary and Ex-President Medical Examining
Board of Virginia; Lecturer on Surgery,
University of Virginia, etc.

The artificial feeding of infants, or, as it might be more properly put, the *care of bottle-fed babies*, is a subject which just at this season of each year demands the attention of practicing physicians probably more than any other department of the general practice of medicine. Why this should be so is not to be explained satisfactorily to every one, although there can be little doubt that thermometric and hygrometric conditions play a large part in the causative conditions which lead us to apprehend trouble with our infantile clientele from the middle of May till the middle of July.

As we all know, about this season of each year in every twenty-four hours the thermometer's daily variation is from twenty to thirty degrees, and the nocturnal humidity in the earlier part of this period is very great, as is evidenced by the heavy dews, almost amounting to rain—a condition most favorable to all forms of vegetable life and detrimental to the health of all infants, by reason of the fact that they are, as a rule, not protected against these changes by suitable attention to their clothing and apartment ventilation.

Even in the case of infants having only maternal nourishment, the mothers are not sufficiently careful about their personal hygiene to keep their milk supply at a normal, healthful

*Read at the May meeting of the "Doctors' Club" of Charlottesville, Va., held at the residence of Dr. N. S. Hedges.

standard; much more, then, under these circumstances, is care required in the preparation and keeping of the artificial food, upon which so large a proportion of infants have to be maintained.

Along this line a great deal has been written; the works of Meigs, Pepper, of J. Lewis Smith, and of L. Emmet Holt are classical and in their late editions are upon the bookshelves of almost every practitioner. The latter mentioned is probably the best guide to the care of infants to be found in the English, or, for that, in any language, though my own reading is confined *per force* to my mother tongue. All of these works have certainly been of great help to me; in fact, I may say that I could not now get along without them. Yet a careful observer cannot fail to learn a great deal by taking the experience of sensible mothers, who have for years watched their own children and given them an amount of thought and care almost past comprehension.

Children—*infants*, I mean—should be kept in as perfect hygienic condition as possible. Bi-daily baths are essential and the clothing should be changed to correspond to the changes in the temperature. I am satisfied that many an infant is absolutely destroyed by being too warmly clad. With a room temperature of nearly 90°—all the windows down and doors closed—I have seen a little infant sucking sour milk out of a dirty bottle, with a high-necked, long-sleeved woolen shirt, a flannel belly-band, a long woolen petticoat—reaching two feet below its feet and doubled back on its body—a large, heavy napkin, protected by a rubber or oiled-silk over-napkin, and a heavy dress and flannel shawl over all this. This picture is not overdrawn; all of you gentlemen have seen it time and again, when the child should only have a cotton belly-band, a short-sleeved, low-necked gauze shirt, a diaper of sufficient protective power, little knitted socks on its feet and a muslin dress long enough only to cover its feet as the change in the temperature renders it necessary. At bed time a complete change of clothing is necessary, and with a fall of the temperature a thin blanket or two can be pulled up over its little body, to be again drawn down as the temperature rises. The heavy leg gear which is so often wrapped about the lower limbs and bodies of infants is abominable; it prevents that free motion of their little limbs which they seem to enjoy so much, and which tends to develop and strengthen them. We

have all seen their joyous kicking and the playing with their toes, to say nothing of the kickings which go on in *utero*, often to the serious inconvenience of the expectant mother.

Now, to the food question: My own impression is that all infants should be given a small amount of nourishment occasionally between the hour of its birth and the establishment of free lactation in the mammae of the mother. Two drachms of fresh milk, a half ounce of very hot water—which has been boiled—and a small pinch of milk sugar should be given every four hours after the infant is twelve hours old. Of course, it should be allowed also to extract the colostrum from its mother's breast, as it thus favors its own nursing powers and keeps the mother's breast from becoming *caked*, whether she is going to nurse her child or not.

But we leave the mother here; the infant, for one or more of many reasons, is banished the breast—let these reasons be good, bad or indifferent. Still, I believe all mothers should be urged by the attending physician to make an earnest effort to nurse their young.

In this paper it is not intended to give all the formulae necessary for the preparation of milk for an infant as its days increase in number. At first I advise my patients to get eight 4-ounce bottles from a druggist and boil them. When the fresh morning's milk comes take twenty-two tablespoonfuls of the milk and add to it boiling water enough to make one quart—this will about Pasteurize the food—stir in milk sugar to the taste, fill the bottle and stop each one with a small bit of absorbent cotton; place the bottles in cool water and change the water as often as necessary, provided the people cannot get ice. The child should be fed until, say, 4 months old, every two hours during the day and every four hours during the night; so when a feeding time comes take one of the bottles out of the cold water and put it in a pan of hot water until the temperature of the contained food is about that of the human body. At night the water to warm the milk may be heated over a gas jet or lamp, though I hope that in the discussion of this subject the comparative advantages of warm and cold feeding may be well brought out. Many infants are given cold food—just off the ice, as a routine method—after the fourth or fifth month, and seem to do well. Of course, when it can be afforded, Pasteurizer with graduated bottles can be employed and the thermometer used to prevent the food being raised to too high a tempera-

ture, the importance of which need not be brought to the attention of the members of this club further than to reiterate the fact that a temperature of over 160° impairs the properties of the milk, renders it not only unfit for the infant's food, but endangers it being the subject of rickets and scurvy if persisted in for any length of time.

After the infant has passed its fourth or fifth month the quantity of food is to be increased, and the milk and water made in proportion of half and half, and the intervals between the feeding time is to be lengthened. Six-ounce bottles have now to be used, or even 8-ounce, as this latter amount will be needed for many infants, certainly by the time they attain the sixth or seventh month. The same process of preparing all the food for the day from the morning's milk should be followed, and a fresh supply prepared for the feeding during the night, which, however, may not be necessary more than for one, or at most, two feedings.

About this time of the infant's life—and this applies to breast-fed as well as bottle-fed babies—it will, without apparent cause, become fretful and peevish. An inspection of the child's mouth, with more than the ordinary care required to remove the milk from its mouth left after feeding, will almost certainly reveal swollen, tender gums. The thermometer in the rectum will show a temperature of from 102° - 104° , and the infant will seem ill, refuse its bottle and perhaps vomit portions of its food and pass portions of it undigested from its bowels.

My practice, under these circumstances, is to incise the swollen gum, and in a very large proportion of cases the infant will resume its normal status in a few hours. This condition is very often ascribed by the mother or nurse, or both, to the food, and the necessity for bottle feeding is a matter of much regret to them.

When the infant dependent upon its bottle has attained its eighth or ninth month, many physicians are in favor of adding some starchy material to the food—barley water, or oatmeal gruel; or tapioca; but looking at the question from the standpoint of the healthy breast-fed infant this hardly seems necessary, and unless the child is not relieved, as above, my opinion is that within the first twelve months of its life starchy food is contra-indicated.

At this period of its life the infant needs more food, and the milk-to-water ratio must be further increased. Pint bottles are now neces-

sary, and the ratio of entire milk to water should be about three to one, the combined food being brought up to a temperature of a little below 160° by placing the bottles in a kettle or pan and raising the water up to the required temperature. It has not heretofore been mentioned, but the bottles used by the infant from the very first should be emptied of whatever food may be left at the feeding, rinsed out with cool water and all reboiled every time before refilling. The child should now be fed once every three hours from 6 in the morning till 9 at night, and can soon be accustomed to do without night feeding entirely.

An infant about completing its first year in the latter part of May, June or July gives us more anxiety than any other. The eruption of the canine teeth is now generally taking place and extra attention and care is required. In general, I would say that during this very overheated term I would curtail the amount of food ordinarily ingested, reducing both quantity and strength to that ordinarily administered to a child of one half the age.

This may seem rather strange, but my observation is in decided accord with such a procedure. It is decidedly better than attempting to carry a full food supply and undertaking to make it agree with the child by the employment of some of the numerous artificial digesting agents.

Should such measure of reduction of quantity and strength fail, however, the milk may be predigested before being combined with the water, or a half drachm of elixir peptozymes may be added to each bottle of food.

At the 12-month-old period occurring during the heated term, more attention than ordinary should be paid to the condition of the gums and incision over them practiced as often as the pressure of the advancing teeth seems to make itself apparent. In case after case have I lost the opportunity of paying second and third visits to my little patients by having adopted such a procedure. Some may say, "No wonder at this, as no mother is going to have the barbarous method followed out." But very frequently I have mothers send for me, saying, "Please come; baby's gums need lancing again."

Sometimes it happens that in bottle-fed babies a condition of marasmus will supervene notwithstanding all apparent care. In several of these cases I have observed very marked improvement following the occasional exhibition of orange juice, expressed juice of ripe peaches

and pineapple juice, given, of course, as an extra to the other foods.

When the infant is passed twelve months I would begin the exhibition of starchy food—at first, once in every twenty-four hours. Batter bread with a little of the juice pressed from beefsteak—given in small quantities at first—is a good thing to begin with; this to take the place of one of its milk feedings, which must now be very slightly, if at all, diluted. When 14 to 16 months old the infant should have at least two meals each day involving starchy food—potatoes, rice, grits, etc., with chicken or beef chopped very fine.

After eighteenth months have elapsed since its birth the child may practically cease to be considered as an infant, and dealt with as though it had been raised exclusively from its mother's breast.

During all this period the child's secretions should be carefully watched. Many infants are deprived of water and suffer as a consequence. All infants should be encouraged to drink water.

Keep the bowels moderately open. • Enemata for very young infants are vastly preferable to purgatives given by the mouth. If purgatives must be employed, after 12 months of age give small doses of *carena sopoda* in one of its palatable forms. Give it regularly three times a day for at least six weeks and the muscular coat of the intestine will respond to its use in almost every instance.

In this short paper the diet of sick and invalid babies is not considered.

Spring Medicine.

The eminent authority, Dr. A. H. Ohmann-Dumesnil, of St. Louis, says that during the winter the functions of the organism are not sufficiently active. The artificial heat, avoidance of pure air, lack of exercise, etc., contribute to torpidity, which, in turn, favors deficient elimination, causing absorption of many waste products left from retrograde metabolism. These products are more or less toxic and produce hebetude, causing a condition analogous to narcotism. The individual has numerous minor ills which are disagreeable; soon anxiety arises and he resorts to methods to clear his or-

ganism of these products. One takes calomel, others resort to active cathartics, while the majority take "spring medicines." Sarsaparilla is regarded as especially efficacious if taken with aloes. In the country sassafras tea is still popular; in cities, quinine has its followers.

That clearing the emunctories and the establishment of proper elimination are necessary is appreciated by all. Nothing is more efficacious than tongaline in thoroughly eliminating these poisonous secretions.

On the other hand, the excessive accumulation of uric acid in the organism and deficient elimination of urea are prominent factors in bringing about serious and often fatal conditions. Lithia and its salts are particularly efficacious in making uric acid soluble and easily eliminated in the urine. Their great influence in rheumatic and gouty diathesis depends altogether on this, and their popularity is due to this very property. Tongaline and lithia tablets is a preparation which invariably produces the desired results. It brings on that clean sensation which always follows an increased activity of the emunctories. In thus cleaning out the system it endows the individual with greater resistance and puts vitality upon a much higher level than it has hitherto been. In other words, it thoroughly eliminates all the old foul detritus and places the organism once more in a condition fit to combat with the demands and to overcome the wear and tear and fatigue which occurs in the spring. Those who have thus used this preparation are the firmest upholders of this excellent remedy as a rational "spring medicine."

The addition of lithia to tongaline is an ideal combination, which does not rely upon its action on the kidneys alone, as is the case when lithia salts or waters are administered; hence the kidneys are not compelled to do all the work, but are materially assisted by the extraordinary eliminative action of tongaline upon the other emunctories.

Glycerophosphates Comp. (Sharp & Dohme) gives renewed vitality to the wornout, builds tissues and is useful in neurasthenia or wherever there is lack of nerve tone. A supply has been shipped to their Richmond agents, Messrs. Richard Gwathmey & Co.

THE TREATMENT OF ENLARGED PROSTATES.*

By W. P. CARR, M. D., Washington, D. C.

One of the most trying problems that the surgeon is called upon to solve is an aggravated case of prostatic hypertrophy in a feeble old man, complicated, as such cases usually are, by cystitis and atheroma, and perhaps by cardiac lesions and nephritis.

Such cases are, unfortunately, quite common, and the termination under any form of treatment is usually fatal after a painful and lingering illness.

My feeling is that such cases should not exist. There is no more excuse for their existence than there is for enormous tumors of the uterus or ovaries.

They should be cured before this hopeless condition is reached. The mortality of the various operations for the radical cure of prostatic enlargement is quite high, and may be roughly given at from 7 per cent. to 25 per cent. But a careful examination of the cases, and of the causes of death, will show that nearly all the deaths are among the aggravated cases in feeble old men, and nearly all the recoveries are comparatively uncomplicated cases in more vigorous men. No stronger plea could be offered for early operation. We all now recognize the importance of early operation in tumors, appendicitis and many other conditions, but we have clung and are still clinging too long to palliative treatment in the case of the prostate.

J. William White, in his article in Dennis' *System of Surgery* (Vol. III, page 626), says: "It may be said at once that in those patients with but moderate obstruction or with a high grade of compensatory hypertrophy of the bladder, with a small amount of residual urine, which remains sterile, and in whom catheterization is easy and painless, operation is not to be thought of. The time may come when by perfecting our methods of diagnosis and our operative technique this class of prostates may be benefited by surgical interference, but it has not yet arrived. Dilatation and catheterization, as above described, at present represent the best therapeutics, especially if the rigid observance of the details of antisepsis be emphasized. But it must be remembered that these methods are, in the majority of cases, merely

palliative, and that, as a rule, the introduction of instruments becomes gradually more difficult; cystitis and atony of the bladder result from the catheterization, which increases both in frequency and in painfulness, and some operative measure must be considered. Operation is therefore indicated when the patient is unable to pass a catheter upon himself, or when instrumentation becomes more and more difficult and painful, or when the urine begins to show fermentative changes and cystitis seems inevitable."

I cannot see why we should wait for cystitis and atony of the bladder before we operate, especially as cystitis and atony of the bladder are among the most frequent causes of death or failure following operation.

I find, however, that this is the advice invariably given. It was given in a number of papers and discussions appearing in the various medical journals of the year just passed. Dr. White, however, goes on to say (*loc cit*): "Unfortunately, however, the majority of patients have passed this most favorable period for operation before they come under the hands of the surgeon, and the pronounced vesical and renal infection, and perchance the general septicæmia and chronic uræmia which exist, obscure the true value of the surgery of the prostate and limit the chances of success."

Of the latter statement there can be no doubt. And even if a patient with nephritis should recover from the operation he will have but a short period of relief before he dies of the kidney lesion.

I cannot agree with Dr. White, however, when he regards a period of vesical atony, fermenting urine, and beginning cystitis as most favorable for operation. The chances may still be good. Indeed, if the patient's general condition is fair, they are still good; but not so favorable as at a still earlier period.

The general practitioner is often responsible for the delay in getting the patient to the operating table. But who can blame him, when the surgeon counsels so much delay, and when he sees the high rate of death and failure following our present method of procrastination? Nothing brings an operation into such disrepute as to use it only as a last resort. As well wait, as we formerly did, for pus to form in appendicitis as to wait for cystitis to develop in prostatic obstruction.

I am firmly convinced that palliative treatment should cease as soon as catheterization be-

* Read before the Medical and Surgical Society of the District of Columbia, January 8th, 1903.

comes necessary. A single distension of the bladder has been known to cause marked and permanent atony of that viscus. I think it may be truly said that the various operations for enlarged prostate are all in themselves practically free from danger, if carefully and properly performed. In other words, all, or nearly all, the deaths are due to complications existing at the time of operation. If we can get otherwise healthy men to operate upon the mortality will be surprisingly small. I have seen no deaths at all in such cases.

I would, therefore, recommend prostatectomy as *the treatment*, and the only treatment to be considered, in uncomplicated cases in comparatively vigorous men, and the only danger I seriously fear in such cases is the danger of the anæsthetic. There should also be no failures to cure, as failures, or partial failures, are always due to atony or sacculation of the bladder, atony of the vesical sphincter, co-existing calculi, or other complications of a late stage of the affection.

I regard complete prostatectomy as the only certain and permanent cure. Dilatation, prostatectomy, and the Bottini operation are all frequently followed by relapse. Castration is of benefit only in certain cases. These methods, however, are to be considered in the very old and feeble, and where septic conditions of the bladder exist.

The opening of a septic bladder is attended by the gravest danger, whether the opening be supra-pubic or infra-pubic. Cystotomy is almost certainly fatal also in feeble patients with phosphatic deposits in the urine.

I have seen the wounds become encrusted with lime salts and remain for weeks without perceptible change, while the patient grew gradually weaker and finally died of exhaustion. In such complicated cases I think the choice lies between the Bottini operation and castration. Castration is only suitable for cases of glandular hyperplasia, and does no good in fibrous enlargements. It is also often refused by patients even in extreme old age. I believe it is a certain cure, however, in suitable cases, and that the cure is permanent. This cannot be said of the Bottini operation, for relapses frequently follow it. The Bottini method, however, is perhaps the safest of all, as it can be done without general anæsthesia, and it is fairly successful. It is specially applicable to hard, fibrous or valvular prostates,

and when complications exist that contra-indicate general anæsthesia.

Before fixing upon any operation a careful examination of the patient should be made both as to local and general conditions. His heart, lungs, arteries, alimentary system and kidneys should be especially examined. The urine should be examined chemically, microscopically and bacteriologically. The expulsive power of the bladder, the amount of residual urine and degree of sacculation should be carefully noted. The size, shape and consistency of the prostate should be determined by rectal examination, aided by a sound in the bladder, and by cystoscopy. Valuable information may be gained by use of the cystoscope, both as to the size and shape of the intravesical portion of the prostate, and as to the condition of the bladder walls.

I have known a vesical calculus to be discovered in this manner, that was embedded under the prostate and had escaped detection by all other methods. These points being settled, the choice of operation becomes comparatively easy. If the general condition is good and the bladder not septic, a supra-pubic prostatectomy will not be dangerous, and will give certain and permanent relief. If the general condition is fairly good and the prostate large and comparatively soft, and the bladder septic, it will be dangerous to open the bladder, and castration becomes the operation of election. Cystitis usually disappears as well as the sacculation of the bladder after removal of the testicles. But it is pretty well settled that castration does not affect hard, fibrous prostates; and in these cases where the general conditions are not favorable for prostatectomy the Bottini operation should be chosen.

The patient's condition may often be vastly improved by rest, diet, drainage and lavage of the bladder, and by suitable medicines. Such treatment should always precede operative interference where the conditions are not satisfactory.

Last summer three cases came to me about the same time. They were such excellent illustrations that I will briefly relate them:

Case I. A wheelwright, 55 years of age; white; good family history and in good health except for beginning atheroma and retention of urine due to enlarged prostate. The prostate was not much enlarged, but was very hard. A large catheter (29 French) could be easily

passed, but the patient was totally unable to void urine. Urination had been difficult for some months, and had gradually become impossible. He had been catheterized, however, but a few times, and his urine was normal when he came to me. Diagnosis of a valvular condition of the prostate was made from the facts that a large sound could be readily passed, that the expulsive power of the bladder was good when a catheter was introduced, and yet he could pass no urine in the natural manner. This diagnosis was confirmed by cystoscopic examination. The prostate was removed by the supra-pubic route, and is herewith presented for your inspection. It is about twice the normal size and hard as gristle. He made an excellent recovery, and is entirely relieved. I regard this as a typical case for prostatectomy.

Case II. A man about 70, with large, soft prostate and severe cystitis. Bladder atonic and sacculated. Castration was followed by slight relief, in a few days, and by complete relief of all symptoms in about two months. For two or three weeks I thought the operation had been a failure, but there was steady improvement after that time to a perfectly satisfactory result. This man's general condition was only fairly good, and he could not have stood a prostatectomy with the septic condition of the bladder.

Case III was a man between 70 and 80, with marked atheroma. He had a very hard prostate and cystitis. Thinking he could not stand a prostatectomy, and that castration would do him no good, I sent him to Dr. Young, in Baltimore, for a Bottini operation. He returned in about a month. Dr. Young, he told me, had discovered a stone in his bladder, with the cystoscope, which was embedded behind the prostate, had done the Bottini operation without much pain by using cocaine solution in his bladder, and had crushed and evacuated the stone in the same manner. He was completely relieved. This was just at a time when I thought the castration in Case II was going to be a failure, and I regretted not having sent him to Young also. But a month or so later he came to me again with a return of his old troubles, and my case by that time was well.

However, I advised him to go back to Young. I have not seen him since, but heard that he had more stone removed, and that he is again relieved.

I think castration would have been a failure

in this case, because of the fibrous nature of the enlargement.

In suitable cases, however, castration, as has been shown by White (*loc cit*), prepares the way for crushing calculi quite as well as the Bottini operation.

Correspondence.

Reorganization of Medical Society of Virginia.

Mr. Editor,—As in your recent editorial on the Reorganization of State Medical Societies you make a direct argument against the change in the Constitution of the Medical Society of Virginia, proposed at our last meeting and to be voted on at the Roanoke meeting, I hope you will allow me to say a word or two in favor of the proposed amendment.

In the first place, the new constitution, though it follows the lines laid down by the American Medical Association, was not proposed simply to fall in line with the other States in the Union, however desirable that might be. It was proposed as the most feasible method of bringing our State Society into a closer relation with the members of the profession scattered throughout Virginia, and to reorganize some of our business methods.

As you know, I have been a regular attendant at the meetings of our Society, and am glad to say that I have derived a great deal of pleasure and profit from its scientific sessions, which I would not change a particle, if it lay in my power, nor would I debar any qualified member of our profession from attending these scientific sessions. But a medical society has other duties, besides that of fostering pleasant and instructive scientific discussions. It has business matters to consider—matters often of much more vital importance to the profession than any scientific discussion. It is here that, in my humble opinion, the Medical Society of Virginia needs revision.

A society, to be of greatest service, must touch the *individual members*, and must touch them in their daily lives. Its members must feel that *their society* is of practical help to them—a help which they can call on to assist in lifting the burdens which often oppress them sorely. It must also be a bond of union for the

profession of the State, and a bond which binds every day of the year, and not merely the three days of the annual session. It must have force enough to call forth the united efforts of the profession to push important public matters, and strength enough to enforce its rules among its members. I do not think that its warmest friends, of which I am one, can claim that the Medical Society of Virginia stands in such a relation to its members.

Under the present arrangement it is indeed almost impossible to get a business matter considered by the Medical Society of Virginia, the time allotted to business being a few minutes in the evening, after everything else has been finished, and the same amount of time early in the morning, before there is a fair attendance, and even at these times the member introducing such a measure is made to feel that he is trespassing on time which should be utilized in scientific discussion. Indeed, it has been found necessary to introduce business matters as scientific papers, in order to get a fair hearing, as was the case with the Special License Tax discussion. Here the whole scientific programme of the Lynchburg meeting was disarranged by a purely business discussion, and, as might have been expected, both the business and scientific programmes suffered.

It is evident that we have now reached a point in the history of the Medical Society of Virginia where we must either have an extra session, devoted entirely to business, or a separate body to take charge of the business matters. The question is, which of the two plans is better suited to Virginia? Which of the two will more truly represent the profession at large? and which will accomplish the better results? After having given the subject much thought, the plan of having a House of Delegates seems to be the most feasible solution of the problem, as all business matters can be cared for by this body, leaving the general session free to discuss scientific matters, though a referendum may be made to the general body in case of any very unusual question.

Let us see how a general session of our Society is at present constituted. We must take turns at meeting in the different sections of the State, and the section in which the Society meets will naturally furnish the majority of the voters, while the other sections are left practically without a voice in the business transactions, the members, whom circumstance keeps at home, being entirely without representation.

Just think what it would be if, instead of sending delegates to the Legislature, each voter had to go to Richmond to express his opinion on a law. What an advantage the people of Richmond would have over the rest of the State! Yet this is the way the Medical Society of Virginia is doing at present, and in consequence "the backwoods practitioner" you are so anxious about is now practically without a voice in the business matters of our Society. When represented by a delegate, he would have the same weight in the Society that the country districts now have in the Legislature, where, as you know, they are supreme.

According to my observation, the State Society has little, if any, influence upon the profession of Virginia, except during the three days of its annual session, and during the remaining three hundred and sixty-two days it is practically forgotten. Under the circumstances it is not surprising that it is seldom ever considered in the arrangement of a local medical difficulty, and that its ethical rules are broken with impunity. These conditions can only be remedied by local societies, bound strongly together and acting in unison, as would be the case with the local societies organized under the proposed new constitution.

I will now try to answer your points in detail. You say in your editorial that "only eighteen States have such organization." One of the Virginia delegates to the American Medical Association, Dr. Stuart McGuire, writes me that "thirty-odd States have reorganized and are all enthusiastic over the new system," and that "Virginia is one of three that have not adopted the new constitution." Kindly look this matter up again, and advise me, along with your other subscribers, as to the true state of affairs.*

I have already answered your second point, but will state again, that I want the scientific sessions to be open to everybody, but want the business meetings to be representative, as they can only be with a House of Delegates. Not being a "professor," I must be a "backwoods practitioner," and hence can speak for at least one whose feelings will not be hurt by being represented in a House of Delegates, instead of having my vote count for nothing, as at present.

* NOTE BY EDITOR.—The statement made in the Editorial referred to was compiled from the Official Report of the Committee on Reorganization of State Societies presented to the House of Delegates of the American Medical Association during its session at New Orleans, May 1903.

As I have tried to show, the State at large will be much better represented under the new plan, and I feel certain that the profession of Virginia, when well organized, will take a much more practical interest in the State Society than at present, as has been proven to be the case in other States. I would not debar a man from taking part in the scientific work if his county had no society, but let this fact simply debar him from representation in the House of Delegates. As two or more counties can combine to form a single society, I see no reason why after a few years every county should not be represented.

A truly representative body, such as the House of Delegates, will have much more effect on general legislation than we now have with our present slipshod methods, which have often brought about failure when we should have had assured success.

Finally, let me repeat, that I do not want the scientific work altered, but the proposed plan will aid scientific work by taking business matters entirely out of the general sessions. The scientific programme has no real relation to the business work of a Society, and the fact that the former has attracted distinguished men no more argues for the effectiveness of our business methods than the fact that Washington and Jefferson were Virginians argues that our old State Constitution was perfect. New conditions forced a change in the Constitution of Virginia; new conditions call for a change in the Constitution of our Medical Society.

Yours very respectfully,

CHARLES R. GRANDY, M. D.

Norfolk, Va.

Tyree's Antiseptic Powder.—Disease and dirt are the demoniac twins of ignorance. Cleanliness is, indeed, godliness. Mucous membranes inflamed and throwing forth unclean discharges should be flushed with pure warm water containing an alkaline, soothing, healing germicide. We have such in Tyree's Antiseptic Powder and this can safely be commended to the public by physicians. Catarrhal disturbances, no matter whether located in the throat, nose, genito-urinary equipment or rectum can be promptly relieved by using this powder as directed on the box.

Analyses, Selections, Etc.

New Operation for Cholecystotomy.

After reviewing the literature on the surgical treatment of cholelithiasis, Dr. W. W. Lynch, Plano, Tex. (*Tex. Med. News*, April, 1903), has found that cholecystotomy is the operation of choice. It is safer, after removing the stones through the opening in the gall bladder, and ascertaining that the bile passages are open, to suture the wall of the gall bladder to the edges of the parietal incision, than the so-called "ideal operation" of closing the opening in the gall bladder and returning it into the abdominal cavity. The operation he proposes, however, is not practicable where adhesions have robbed us of the use of the peritoneal membrane.

Dr. Lynch's operation is ideal in that, in case of leakage, the peritoneal cavity is closed against the extravasation of bile, or infection, and it is also applicable to those cases where it is, for any reason, desired to leave the opening in the gall bladder unclosed for drainage.

Make a perpendicular parietal incision, extending from 2.5 cm. below the costal margin over the tumor, through the outer fibres of the rectus muscle, to a length of about 12. cm. Close the incision in the gall bladder—after removing the calculi and ascertaining that the bile passages are clear—with two rows of sutures and return to the abdominal cavity. Close the general peritoneal cavity by suturing the edges of the parietal peritoneum together with a small continuous cat-gut suture, beginning at the lower end of the incision and working in the direction of the gall bladder. When the fundus of the gall bladder is reached, suture the edges of the parietal peritoneum to the peritoneum of the gall bladder, including a few fibres of the fibrous coat—encircling the closed opening in the gall bladder and ending where the circle was begun. This suture must not penetrate the mucous membrane of the gall bladder, nor approach too close to its closed incision. The parietal wound is closed with interrupted silk-worm-gut sutures, leaving untied one or two sutures over the fundus of the gall bladder for drainage. Remove the drain in from forty-eight to seventy-two hours after operation and tie the remaining sutures, if there is no leakage or no infection in the wound.

After careful study of the anatomic relations

of the gall bladder and the changes these relations are subject to—the layer of peritoneum partially covering it—and the physical and physiological properties of the peritoneal membrane, Dr. Lynch is convinced that the gall bladder can, with a great degree of safety, be returned into the abdominal cavity and drained, without suturing it to the abdominal wall, if the general peritoneal cavity is closed against extravasation of bile and infection as outlined.

He submits the following points:

1. The peritoneal membrane can be sutured, with a half-curved round intestinal needle, without cutting edges, so closely with a continuous suture as to leave no tears or holes in it.

2. The parietal membrane yields easily and readily with movements of the gall bladder during respiration, coughing or vomiting, and the tension thrown on it is probably no greater than that used while suturing it.

3. The peritoneal membrane rapidly and abundantly throws out a plastic exudate, strengthening the walls of the fistula and barricading the general peritoneal cavity against irritation and infection every hour after the operation.

4. A drainage tube snugly fitted into the gall bladder, with gauze packed around it, and carefully applied dressings, would, in case of a tear, occurring after operation, prevent the extravasation of bile into the peritoneal cavity until the opening is walled off by adhesions.

The operation has *some advantages* over those done where the fundus of the gall bladder is sutured to the abdominal wound—viz.:

1. The possibility of a persistent or permanent biliary fistula is reduced to a minimum, because of the plastic properties of the peritoneal membrane.

2. The chances of stitch-hole infection, or infection through faulty technique, are lessened, because of less suturing and handling. This happened in the case reported.

3. The gall bladder has greater freedom of movement during respiration, coughing or vomiting, and consequently the chances of a painful adhesion resulting is lessened.

4. The operation can be done as quick, if not in a shorter period of time, than that consumed in some of the fixation methods.

Mayo Robson prefers, when there is time, to stitch the peritoneal layer of the gall bladder to the parietal peritoneum, and the mucous layer to the aponeurosis, and a drainage tube

is inserted. When the gall bladder is contracted and cannot be brought to the edge of the wound he sometimes tucks down the parietal membrane to the gall bladder and sutures it to the edge of the incision. These are quite similar, and the only two found in literature that are in any way similar to the operation Dr. Lynch offers for cholecystotomy.

New Method of Treating Typhoid Fever—Benzoyl-Acetyl Peroxide, or Acetozone as an Intestinal Antiseptic in Typhoid Fever.

Dr. Frederick G. Harris, of Chicago (*Therapeutic Gazette*, March, 1903), reports 128 cases of typhoid treated in Cook County Hospital, Chicago, with acetozone. The cases first admitted seemed to indicate that the epidemic was of a mild form, but later the disease proved to be of a severe type and complications were numerous. The author obtained the most satisfactory results with aqueous solutions of 15 grains to the quart, which the patients were urged to use very freely to quench the thirst, while in addition four to six fluid ounces of the solution were given every four hours as a therapeutic measure. The movements of the bowels were regulated with sodium phosphate or magnesium sulphate.

The temperatures of the patients, on admission, were high, as a rule. In 117 cases under acetozone treatment the average duration of the fever was 18 days.

The number of recoveries was 117, or 91.4 per cent., while 11 patients died, a mortality of 8.59 per cent.; statistics of the cases of typhoid fever in the same hospital (Cook county) not treated with acetozone show a death rate of 13.1 per cent. The author is of the opinion, that under the acetozone treatment, in favorable cases, the duration of the disease was materially shortened, and the most disagreeable symptoms were ameliorated. He declares that the characteristic fetor of the stools and the peculiar odor of the wards was greatly diminished; there was less stupor and delirium and less tympanites, and, the usual diarrhea was checked. An average of 138.12 grains of acetozone was used in each case. Finally he reaches the conclusion that when cases can be seen during the first week of the attack and large amounts of acetozone given, assisted by a gentle laxative, the tem-

perature will return to the normal in from ten to twelve days.

Four cases of typhoid fever, in which acetozone was employed with satisfactory results, were reported by Dr. Charles Emil Brack, of Baltimore (*Medical Age*, January 25th). In each case the treatment consisted in the use of acetozone in solution. The first three patients, adults, received 30 grains of the drug per diem; the fourth, a child of four years, received eight grains each 24 hours. Prompt recovery occurred in each case.

Dr. James Billingslea, of Baltimore (*Atlanta Journal-Record of Medicine*, February, 1903), reported 25 cases of typhoid fever treated with acetozone. The diagnoses were confirmed by board of health examinations. The treatment consisted in clearing the bowels thoroughly by means of calomel. Liquid diet was prescribed and cold or sponge baths were used as occasion required. The special treatment consisted in shaking 15 or 20 grains of acetozone powder with one quart of water, allowing the insoluble residue to subside. The patient was given the clear solution to drink freely, the whole amount of one quart being taken during twenty-four hours. The writer suggests that one part of the acetozone solution may be mixed with three parts of milk if thought desirable. The action of acetozone will be materially aided by the use of a mild saline laxative.

He found that the feces soon lost their disagreeable odor by this treatment, and cold baths were required to a much less extent than with other treatment. Furthermore, the nurses universally affirmed that they found patients under this treatment easier to care for. No evil effects were noted from the use of acetozone.

A further contribution to this subject appears from the pen of Dr. J. J. Driscoll, of Chicago (*The Kansas City Medical Index-Lancet*, January, 1903), who relates his experience in six cases. He found that acetozone reduces the temperature, shortens the duration of the disease materially, while it does not seem to have any ill effects on the heart. The feces are completely deodorized in 36 to 48 hours and tympanites rapidly disappears.

What sort of countenance is welcome to an auctioneer? * One that is forbidding.

Editorial.

Substitutions of Pharmacists, etc.

Scarcely a week passes that we do not hear of some glaring fraudulent substitution of manufacturer's goods, etc. For instance, The Farbenfabriken of Elberfeld Co., of New York; the owner of the phenacetin patent, have come across fraudulent substitutions by the firm of L. J. Fulmer & Co., of Detroit, whose travelling salesman, J. T. Hampton, of Cleveland, Tenn., has involved druggists in Memphis, Nashville, Chattanooga, Knoxville and Dyersburg, of that State, in suits in the United States courts. The goods handled by the concern represented by Hampton, as shown by the records, were in many cases counterfeits, in others "doctored," and none were the genuine goods authorized to be sold under the patent name of phenacetin. Recently, the concern of Fulmer & Co. was raided under orders of the United States court, and their paraphernalia for making and selling their spurious and dangerous goods were captured, as also all of the books and papers of the concern, including all orders on file from the various druggists of the country. It appears that even the druggists who bought of Hampton were aware of the fraud, for they ordered the goods to be shipped to them in the name of Hampton instead of their own. The fraud extended even to Greensboro, N. C., where the order of the pharmacist for trional proved to be some sort of a poison which "came near killing one of his customers and getting him into trouble."

Trional is manufactured by Friedr. Bayer & Co., of Elberfeld. Recently 200 boxes labeled Trional (Bayer) came from Canada through the Niagara Falls, N. Y., custom house. But analysis showed the boxes to contain acetanilid, which is similar in appearance. But an ounce of trional costs more than two pounds of acetanilid. Acetanilid is, however, a very dangerous drug in doses in which trional may be safely administered. The attention of the Canadian Government has been called to the matter, which will bring to justice those who are responsible for the fraud.

American Medicine puts it rightly in saying that "drug adulteration is a peculiarly infamous bit of scoundrelism, of which both the medical and pharmaceutical professions should make an end. * * * The recent examinations of 373 samples of one drug obtained from different

stores in New York city, of which 315 were found adulterated, reveal a condition of the drug trade that is startling." All honest, fair minded people owe a debt of thanks to the Farbenfabriken of Elberfeld Company for taking the proper steps to protect the trade and the physician and the patient from the dispensing of these fraudulent preparations. Such revelations will necessitate the establishment of analytical laboratories in connection with State Boards of Health for the examination of chemicals used in medicine and the assaying of ordinary drugs on the shelves of the dispensing pharmacist.

Valentine's Meat Juice in Periostitis.

In our issue of May 8th we had occasion to refer to the uses of Valentine's Meat Juice in cases of ulcer of the leg, etc. Now, Dr. Alfred D. Marconay, of San Francisco, Cal., writes that while he has been using the meat juice quite extensively in the after treatment of influenza, pneumonia, marasmus, typhoid fever, etc., he is astonished not to find mention of one use of it which he deems better than any one named, and which brought him quite a number of similar cases, "with good results both for the patient and the surgeon's bank account. Let me give you the record of the first from my case book: John H., aged 3; occupation, street car driver; nationality, Irish. Called to see if patient should have to be removed to City and County Hospital on account of a severe periostitis of left tibia. Found deep seated ostitis and extensive periostitis of four inches length at the juncture of upper and middle third of right tibia. Hypodermic injections of campho-phenique, which I had seen used with good results in the hospitals of Paris and Vienna the year previous. Dragging along three weeks, no satisfying results. I got mad at myself and began to think day and night about the confounded case. One night I woke up suddenly—the riddle was solved; the bone needed nutrition locally as well as the body needed it internally. Put him on Fellows' hypophosphites (with lime) 5j three times a day, and used locally hypodermically, every day twenty minims of a concentrated solution of Valentine's Meat Juice. In three weeks this man got well."

The Antikamnia Chemical Co.

Has moved into its new home, 1622-1626 Pine street, St. Louis, where the new laboratory

is equipped with all the latest chemical appliances, etc., which afford increased capacity for the manufacture of the reliable Antikamnia preparations. In its new quarters, the company has the needed seventy-five per cent. more space than it had in its old plant. The steadily growing esteem in which the products of this company are held by the profession throughout the world is due to the well established merits of the original antikamnia tablets and powder, as well as to the undoubted remedial efficacy and pharmaceutical excellence of the new combination tablets which the company is, from time to time, adding to its line of specialties.

Dr. Thomas L. Maddin, Nashville, Tenn.,

Having completed fifty consecutive years of membership in the Tennessee State Medical Society, was tendered a banquet by the Nashville Academy of Medicine and the Davidson County Medical Society at Nashville, April 7, 1903. The invitation card contains a fine picture of the grand old hero of the profession.

Wanted—A Copy of David Ramsay's Review of Medicine, etc.

Dr. Charles W. Dulles, 4101 Walnut street, Philadelphia, Pa., is anxious to buy a copy of *David Ramsay's "Review of the Improvements, Progress and State of Medicine in the Eighteenth Century,"* 8vo., published in Charleston, S. C., presumably about 1800. If any of our readers has inherited a copy, we trust he will communicate with Dr. Dulles, who wishes to make this valuable addition to his collection of books on American Medical History.

The Florida Medical Examining Board Bill.

Dr. J. Harris Pierpont, of Pensacola, President of the Florida State Medical Association, in urging the members to use their influence to secure the passage of the bill by the Legislature, explains that the great object desired is to have created a *Central State Board of Examiners*, instead of the present system of district boards. Nearly all the other States of the Union have central boards of medical examiners. It is the only way to secure uniformity, and eventually to establish reciprocity between different State Boards.

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THE GALL BLADDER AS A SOURCE OF DANGER.*

By M. M. JOHNSON, M. D., Hartford, Conn.,
Surgeon to Woodland Sanatorium, etc.

A study of the anatomy of the gall bladder would lead one to almost believe that nature had either made a mistake or else was working in the interest of the surgeon, for—on account of its position and because of other conditions that prevent drainage or make drainage difficult—the formation of gall stones is, in many instances, inevitable. Considered from this point of view, with the further influence that investigations which tend to show that the gall bladder is a really useless organ, have upon us, the question naturally presents itself as to whether it is not really a source of danger that should, upon the first sign of trouble, be removed?

The gall bladder is located in a shallow depression found on the inferior surface of the right lobe of the liver, known as the "fissure, or fossa, of the gall bladder." (Deaver.) Its fundus extends about one and one-half inches beyond the anterior border of the liver, and is situated opposite the right, ninth costal cartilage, or the angle formed by the right costal margin and the margin of the right rectus muscle.

With the body in an erect position, the lowest portion of the gall bladder is the fundus, and the bile naturally flows into this receptacle, especially when the stomach is empty. The body and neck of the gall bladder are directed backward and upward, to the left—an S-like curve being presented by the neck—which, becoming narrower, ends in the cystic duct.

It is a fibro-muscular sac, lined with mucous

membrane and covered with peritoneum which passes from its sides upon the adjoining surface of the liver. The mucous membrane of the neck and of the cystic duct is arranged in a spiral fold (valve of Heister) which prevents the sudden expulsion of the gall bladder's contents. It is so tough that if taken out of a fresh body, inflated, and then permitted to dry, a man of ordinary weight may stand upon it without rupturing its walls. (Deaver.)

The common excretory duct of the liver is formed by the junction of the cystic and hepatic ducts, one-half inch above the upper margin of the first portion of the duodenum. The cystic duct leaves the neck of the gall bladder and passes obliquely downward for about an inch and a half, to join the hepatic duct, the latter being formed by two ducts of equal size, that leave the liver through the transverse fissure. Both the hepatic and cystic ducts traverse the gastro-hepatic omentum.

The common bile duct descends between the layers of the lesser omentum on the right side of the hepatic artery, runs behind the first portion of the duodenum and passes along the posterior-internal aspect of the second portion of the duodenum, where it is embedded in the sulcus between that portion of the duodenum and the head of the pancreas. It is joined by the pancreatic duct and then passes obliquely through the duodenal wall and opens into the duodenum on the summit of an elevation on the inner aspect of the gut, about four inches from the pylorus.

It is important to note the anatomical mechanism of the gall bladder in considering it from the standpoint which we are assuming, and to observe the extreme likelihood of the drainage being imperfect, for the fundus, being the lowest part of the gall bladder, causes the free gravitation of bile into this receptacle, while, to expel it, force is required. Furthermore, the neck being in the form of a double, or S-like, curve, and becoming narrower as it

*Read before the Connecticut State Medical Society, May 27th, 1903, at Hartford, Conn.

ends in the cystic duct, makes an additional barrier to the outflow of the bile, while the spiral fold in which the mucous membrane of the neck and cystic duct is arranged, forming the valve of Heister, offers an additional obstruction. With these three anatomical conditions to consider, the only wonder is that gall stones are not inevitable in all of us, instead of being present only in about the ratio of 1 to 10.

In reviewing the many articles written by eminent surgeons on the surgery of the gall bladder, I find that Dr. W. J. Mayo, of Rochester, Minn., for clear presentation of principles and from the point of experience, stands practically second to none, with the possible exception of Dr. Kehr, of Halberstadt, Germany, who excels him only in the number of cases that have come under his observation and in the number of operations performed. Dr. Mayo, in a report of a series of 328 operations for gall stones and other diseases of the gall bladder, states that the stones were found in the gall bladder, or cystic duct, or both, in 214 cases, showing that of the 328 operations, upward of 65 per cent. were confined to the gall bladder and cystic duct. From observations that have grown out of his wide experience in such operations, Mayo states that it is his belief that cholecystectomy will gain in favor, and will undoubtedly supercede cholecystostomy in a large class of cases; and, indeed, it is clearly evident that for cases in which the cystic duct has been obstructed, or in which the stones have been lodged in the duct for a length of time, cholecystostomy is insufficient and that the gall bladder should be extirpated at the primary operation.

The view has long been held by Dr. Mayo that the dependent fundus was an important mechanical factor in the formation of stones, as it interferes with perfect drainage. On this account it seems reasonable to suppose that cholecystitis might exist without stones in the cases in which the fundus was above the cystic duct. Dr. Mayo considers cholecystitis, with or without obstruction of the common duct, as one of the most dangerous conditions for which we are called upon to operate. Progressive infection of the ducts is apt to supervene and, therefore, there should be the least possible manipulation and quick drainage should be established. It is safer to remove the entire gall bladder at a healthy point proximal to the stone

or to leave a stone for a secondary operation than to try to remove it at the primary operation when there is the least indication of progressive infection, but in all other conditions the stone should be removed at the primary operation. In his observations on his secondary operations, Dr. Mayo establishes the principle that in this class of cases the only permanent relief is in the extirpation of the gall bladder.

Dr. Maurice H. Richardson, in connection with the surgery of the gall bladder, holds that certain lesions in themselves demand the removal of the gall bladder whenever possible. New growths and gangrenes come under this head. He holds, however, that contracted and inflamed gall bladders with thickened walls are better treated by cholecystostomy than by extirpation, but that all gall bladders that do not permit of easy and efficient drainage should be extirpated. Where the cholecystitis is acute he regards drainage as sufficient, but where it is chronic with dilatation and thickening of the gall bladder, especially when a stone is impacted in the cystic duct, extirpation is the remedy, unless the stone can be dislodged backward into the gall bladder. But even where the cholecystitis is acute, if the gall bladder is contracted or if it is gangrenous, he also believes in extirpation.

Dr. Albert J. Ochsner, of Chicago, in an article on the surgery of the gall bladder, calls attention to the fact that the dependent fundus of the gall bladder shares the fate of all similarly constructed organs of the body—the stomach, the urinary bladder, the pelvis of the kidney—so long as there is nothing to interfere and to prevent their contents being emptied they are almost certain to remain normal, but as soon as anything occurs to interfere with the natural emptying of the organ, trouble is likely to ensue. In other words, an interference with the drainage is sure to cause a certain amount of residual substance which makes the accumulation of bacteria possible, and from this accumulation we must expect injury to the lining of the organ, which may be simply catarrhal at first, but which will later become destructive to the mucous membrane, giving rise to the formation of ulceration, and this, in turn, will result in cicatricial construction and further obstruction. In this manner the condition must progress from bad to worse.

These observations of Dr. Ochsner are par-

ticularly interesting as showing the source of danger that the gall bladder is on account of its dependent fundus and seem to strengthen the position that extirpation of the gall bladder is the real remedy. Indeed, the trend of surgical opinions of the most experienced operators is that in all cases where the common duct affords unobstructed drainage, cholecystitis, with or without gall stones, should be treated by extirpation. It is but natural to ascertain, however, in a treatment so radical, what the function of the gall bladder is and what the general effect will be upon the subject upon whom the operation is performed and the gall bladder extirpated. This question is thoroughly well answered in a scientific article of extreme interest by Woods Hutchinson, A. M., M. D., of Portland, Ore., who, in the *Medical Record* of May 16, 1903, writes under the caption: "Is the Gall Bladder as Useless as It is Dangerous?" Dr. Hutchinson states that he was making a study of the alimentary canal and its appendages; his attention was attracted by the singular position occupied by the gall bladder, its small size, thick and inelastic walls and marked tendency to disease in our own species impressing itself upon him. He brings out the following points in the course of his article: It is one of the most inconstant appendages of the alimentary canal. It may be said to be present in the majority, both of classes and species, of any given class. But at the same time its disappearance will occur not only in species of the same class or family, but even in the same genus without any reason. It is absent in the horse; present in the cow and sheep; present in the goat; absent in the deer. In birds it is present in the hawk and owl, and is absent in the dove family. In animals living on similar food it may be present or absent.

Drawing his conclusions from his extensive observations in *post-mortem* studies conducted by him in the zoological gardens of this country, London, Berlin and Leipzig, Dr. Hutchinson states that the gall bladder is a functionless organ. He was helped on to this belief by the almost constant relation which has been found by Naunyn, Welch and others to exist between the formation of gall stones and the bacterial invasion of the gall bladder, and attention may also be called to Roswell Park's paper in *American Medicine*, entitled, "Why Not Treat the Gall Bladder as We Do the Appendix?"

It is evident that the gall bladder never had

a function which would in any way compensate for the danger to which it exposes its possessor. Hutchinson considers himself safe in saying that the principal secretions of the gall bladder are mucous and gall stones. Considering its value as a reservoir for the storage of surplus bile, storing up the bile during the activity of the secretion and reserving it as a surplus to be used when needed, Dr. Hutchinson states that the capacity of the gall bladder is from one ounce to an ounce and a half, and even when distended it contains only from three to four ounces, while the amount of bile secreted in twenty-four hours is estimated to be not less than three pints, and some investigators put it as high as five or six pints. From these figures it will be seen that that which some regard as a reservoir will contain only from 1-30 to 1-20 of the amount of bile it is supposed to store up, or, in other words, it will hold only the amount of bile secreted in thirty-five minutes out of the twenty-four hours.

Another function ascribed to the gall bladder is its action as a regulator of tension of the flow of bile; but in advancing this theory, we must bear in mind the fact that no bile can enter the gall bladder unless there is a contraction of the circular fibres of the ampulla of Vater, so the bile cannot enter the intestines, and as long as the bile flows into the intestines without obstruction, it will not enter the gall bladder. In view of this fact the value of the gall bladder as a regulator of the flow of bile appears purely imaginary.

Hutchinson still further throws doubt upon the value of the bile as a secretion. He considers it mainly a waste product secreted by the liver, as a result of the destruction of toxins and ptomains brought to the liver by the portal blood. He quotes Croftan as having shown that the resulting pigment is picked out of the blood by the liver, as urea is picked out by the kidneys; and judging from this point of view it seems only reasonable to state that the gall bladder is a small sluggish side-pouch upon a secretory duct.

Roswell Park holds that the gall bladder should be removed whenever diseased, and that it should be treated as a supernumerary organ that is a constant source of danger.

In summing up at the end of his article, Dr. Hutchinson states his conclusions in the following concise and pointed manner: "The gall bladder is a nearly functionless organ, inad-

quate in size to act as a reservoir of any value for the bile; inadequate in muscular power and in mechanical position to exercise any important effect upon the pressure of the bile flow; entirely absent in many species, without interfering with the processes of digestion or the vital functions in any way; capable of removal from a species in which it is normally present without noticeable injury, and chiefly notable as a settling basin for the formation of gall stones, a suitable harbor for the multiplication of pathogenic bacteria, or for the assumption of pathogenic properties by non-pathogenic forms. In short, it seems a source of danger at least double any possible usefulness which it may possess."

CONCLUSIONS.

I have operated on the gall-bladder and ducts thirteen times; cholecystostomy with drainage, six times; gall bladder closed by Lembert sutures and returned to the cavity without drainage, three times; cholecystectomy with closure of abdominal wall, four times.

1. It is evident that the gall bladder is as useless as it is dangerous.

2. Cholecystectomy should be performed in all cases where the biliary and common ducts are unobstructed.

3. The most important factors in the production of gall stones is the lack of proper drainage, due to the anatomical mechanism of the gall bladder and ducts and the presence of bacteria.

4. Cholecystitis is the most dangerous condition for which we are called upon to operate, and it is the only condition in which a stone lodged in the cystic duct should be left for a secondary operation.

5. There is no history of the reformation of gall stones following an operation.

ADRENALIN IN EYE, EAR AND NOSE WORK.*

By T. W. MOORE M. D., Huntington, W. Va.

Adrenalin, as you are doubtless aware, is a preparation recently placed on the market, made from the suprarenal gland, and representing the medicinal principles of it. The manufacturers tell us that, chemically, it is a basic substance

barely soluble in water. They make also a solution of adrenalin chloride, 1 to 1000, which is a stable solution, and is the preparation with which I am familiar.

The use of suprarenal gland as a powerful astringent and hemostatic has been well established, the principal trouble having been the annoyance of preparing a fresh solution daily, which was necessary owing to its rapid decomposition, although Fauber, of Cincinnati, claims to have prepared a solution by the addition of one grain of salicylic acid, that kept for over one year; and Chappell makes like claims for his solution, to which he added 1 per cent. resorcin.

My experience with the new preparation has extended over a period of three years, and has, of course, been limited to eye, ear and nose work. Of its use internally as a medicinal agent I know nothing, although I might here add that during the three years I have used the suprarenal extract I have not had one case of fainting or great prostration, with cold skin, blue lips, weak, rapid pulse, and clammy sweat as so often followed the local use of cocaine before the two drugs were associated. Whether this is due to lessened absorption of the cocaine or to the tonic effect of the suprarenal extract, or both, I am not prepared to say.

I will briefly note a few cases where I have used the adrenalin in eye, ear and nose work:

Case 1. Mrs. A. B.; aged, 63; very nervous; had abscess of lachrymal cyst. After subsidence of same, I instilled a few drops of 4 per cent. sol. cocaine in 1 to 4000 adrenalin on internal canuncle, then in a few minutes injected a few drops into canaliculus, which had a fistulous opening, through which solution flowed. After several attempts I was able to get a few drops into nose. I then passed a No. 4 probe without pain; this was repeated at intervals of 48 hours until a No. 8 probe was used, when, owing to patient insisting on leaving town, I was compelled to introduce a canaliculated style.

The point in this case is that there was practically no pain, and the patient who had begged for chloroform when she came to me, dreading the slitting of the canaliculus—does not know when the operation was performed. Of course the anæsthesia and the shrinkage of the structures—there being two cuts, one at the beginning of nasal duct at cyst; the other near the intranasal valve—added materially in lessening pain.

Case 2. A boy 12 years of age, with atresia of

*Read before the West Virginia Medical Association, May 26, 1903, Charleston, W. Va.

puncta. This was dilated under anæsthesia by the solution, and a probe passed through nasal duct with slight pain.

Case 3. Was a tenotomy of internal rectus, with practically no hemorrhage.

Case 4. Was an enucleation under chloroform with no hemorrhage until optic nerve was severed, which bled about as usual in these cases.

Case 5. Was a squeezing operation for trachoma done with cocaine anæsthesia without pain and very little bleeding.

Case 6. Was an indolent corneal ulcer anæsthetized by the solution, to which application of pure tr. iodine was made, and patient was free from pain for two hours—something she had not experienced in several weeks.

In numerous cases of trachoma where copper sulphate stick, or 10 per cent. nitrate of silver solution had been applied, the cocaine anæsthesia has been prolonged ten to twelve times its usual length.

In two cases of kerato-iritis I did not observe any benefit from the solution, and did not see that it increased the activity of atropine as Dudley S. Reynolds claims that it did in one of his cases, and I am sure that it did not prolong its effect.

Twice when removing the middle turbinated body after using the solution there was very little bleeding. In one case the nares was not packed after the operation. In the other, the dressing was removed forty hours afterwards with considerable bleeding, although I sprayed both nostrils thoroughly with 1 to 5000 solution adrenalin chloride before removing the packing.

In another case, under the use of the adrenalin solution, where the inferior turbinate was removed, there was no hemorrhage during the operation, but considerable bleeding twenty-four hours afterwards when dressing was removed. In this patient, after removal of the turbinate, I removed a spur from the floor of the other nostril with considerable bleeding, although both sides were treated precisely alike. This probably demonstrates what Gleason brings out so emphatically in his article on suprarenal extract—viz.: "That it will prevent hemorrhage where the smallest vessels are involved, but is powerless to cope with larger ones."

I have used the 1 to 1000 solution in one case of epistaxis with immediate relief.

Incidentally I wish to mention two patients on whom I used the ext. suprarenal gland after

which there was intense sneezing for several hours. In one case the application was repeated for five or six days before I determined the cause of the sneezing. The other patient was only subjected to its use once, as it was after my experience with the previous case.

Another patient suffered from severe headache after its use, which I attributed to the intranasal manipulation, but after three repeated attacks of headache following application of suprarenal extract solution with cocaine, I used the latter alone with no further headaches. The cause of distress in above cases is not clear. I have not had an opportunity to test the adrenalin in them. I find that after a few weeks the solution becomes pink in color, but that this change does not effect its astringent properties.

I have called the attention of a general surgeon to the probably useful field of this agent in urethral strictures, but so far have seen no mention of its use.

In hay fever, where the suprarenal extract has proven so useful in relieving the distress of these sufferers, this new preparation has many advantages in not having to be freshly prepared. I have not had an opportunity to test it in those cases, but feel assured that it will prove efficient.

To summarize:

1. We have in adrenalin a stable and reliable non-irritating hemostatic and astringent.

2. It prolongs the anæsthesia produced by cocaine and lessens the danger of depression that is so often annoying when cocaine is used alone.

3. We have at hand a solution of known strength, which is well-nigh impossible when the suprarenal extract is prepared extemporaneously.

SOME CASES ILLUSTRATING THE TREATMENT OF DIARRHEAL AFFECTIONS WITH TANNIGEN.

By N. G. PRICE, M. D., Newark, N. J.

Diarrhœal affections contribute far more than any other disease to the mortality during the summer season. While some of the causes are practically unavoidable owing to the unhygienic conditions prevailing in the crowded districts of our larger cities, there is no doubt that sanitary progress is gradually effecting a vast change for the better. The most important problems to be

met from a sanitary point of view are better provisions for light and air in the tenement districts, and for obtaining wholesome and uncontaminated food. The latter is of paramount importance in the case of children in whom diarrhoeal disorders are especially attributable to errors in feeding. Now that the question of supplying children, even those belonging to the humbler classes, with pure milk has engaged the attention of our philanthropists, we can hopefully look forward to a time when gastro-intestinal affections will no longer constitute a scourge of mankind during the summer season.

In this article no attempt has been made to enter into the details of treatment of the various forms of intestinal diseases, which are conveniently grouped as diarrhoeal affections; but it has been thought of interest to relate the histories of a number of cases, in order to illustrate the mode of treatment. Of course, every case is more or less a law unto itself, and no fixed principle in therapeutics can be formulated. The cases represent types of diarrhoea occurring in children and adults, and their treatment may serve as a basis for comparison with others in the practice of my colleagues.

Case I. R. B., baby boy, 14 months old; bottle fed, pale, ill-nourished, with flabby muscles; had been suffering with frequent, foul-smelling, lumpy stools for some time, the mother regarding the condition as the natural result of feeding. On examination, I found the temperature 102° , and the child in a moribund condition. The bowels were at once irrigated with a warm saline solution, and food was directed to be withheld for 24 hours, with the exception of boiled water sweetened with sugar of milk. Calomel $\frac{1}{2}$ grain was ordered to be given every hour till the bowels had moved freely. On the next day I found the child about the same. Powders containing 1 grain of resorcin and 3 grains of tannigen were prescribed, and as a food the white of an egg in a cup of boiled sweetened water with the addition of a teaspoonful of brandy was given. The child improved wonderfully, the stools became fecal, less frequent, and in seven days there was an uneventful recovery.

Case II. B. K., a gentleman of 65 years old, had been suffering with chronic dysentery, which he had acquired through residence in the tropics. He had been under the care of several physicians previous to consulting me, but had derived no permanent benefit from their medication. He had frequent loose evacuations, con-

sisting of mucus and blood, pus and fecal matter. He complained of tenesmus, occasionally had fever, and felt and appeared much enfeebled. I gave him bismuth and salol, but without benefit after three days. Tannigen was then resorted to, giving 15 grain doses in combination with resorcin, 3 grains. Injections of a 3 per cent. tannic acid solution were also made. The patient showed improvement after 24 hours' treatment. The stools became less frequent and more fecal in character, the blood and mucus disappeared, and within two weeks the patient was practically cured. I insisted that he continue the treatment for two weeks longer in smaller doses; 5 grains, to prevent a relapse. The gentleman is in perfect health to-day. I should mention that in addition to the above medication I restricted his diet almost exclusively to predigested beef and peptonized milk.

Case III. Girl, 13 years old; as the result of exposure by sitting on the cold doorsteps of her house, was seized with a severe attack of intestinal catarrh. She complained of griping pains, abdominal tenderness, loss of appetite, thirst, nausea, vomiting, and loose, frequent mucus laden stools. She had a temperature of 101° , and altogether presented a pitiable picture of wretchedness. I gave her calomel, grain $\frac{1}{2}$ every half hour until the bowels moved freely, insisting on a total abstinence from food for 24 hours, permitting only teaspoonful doses of cold vichy, and also ordered $\frac{1}{2}$ grain doses of cocaine hydrochloride every two hours, the body to be sponged three times a day with alcohol. On the next day the vomiting ceased, but the bowel evacuations were more offensive than the day before. I gave bismuth, gr. 10, salol, grains 2, and ordered peptonized beef. The evacuations became less frequent, but the offensiveness and consistency were not at all affected by this medication, nor was the general condition of the patient improved. I next resorted to tannigen, and at once noticed improvement. After 48 hours the evacuations assumed their normal consistency, the offensive odor disappeared, and the general condition of the patient was decidedly better. This case convinced me that tannigen besides being a powerful astringent also has marked anti-bacterial powers. It certainly is more potent than salol, whose bactericidal powers depend on phenol.

Case IV. G. B., a medical student, very zealous in the pursuit of honors, broke down and was forced to vegetate on a farm in a small

country place for several weeks. Three weeks later he developed a profound persistent headache, accompanied by fever. In the course of a few days a tentative diagnosis of typhoid fever was made, which the subsequent course of the case substantiated. Evacuations from the bowels during the second week were very frequent, foul, and exhausting, and in spite of the usual astringents and intestinal antiseptics remained unaffected. Tannigen was prescribed in 15 grain doses, together with resorcin 3 grains, in powders, to be taken every two hours till the movements had diminished in number, when the drugs were to be administered every four hours. This combination worked charmingly, and fully met the indications; the evacuations became less like pea soup, less offensive, and during the subsequent course of the attack I had no further trouble worth mentioning.

Case V. I was called in attendance upon three adult members of a family suffering with persistent vomiting and diarrhœa. On examination, I found some fever in all of them, and upon inquiry learned that the three had eaten canned pears, and in the course of an hour were suddenly seized with vomiting and diarrhœa. I made a diagnosis of ptomain poisoning. I resorted to gastric lavage and colonic irrigations, enjoined abstinence from food, and gave tannigen in ten grain doses. The next day I found them much improved, the diarrhœa was diminished, but the vomiting still persisted. I prescribed cocaine hydrochlorate grain 1-6th, cracked ice and vichy, and continued the tannigen. They all made an uneventful recovery.

Case VI. Baby girl, 10 months old, suffering with ileocolitis, apparently caused by over-feeding. The mother was a very young and inexperienced person, and interpreted every cry of the baby as nature's call for nourishment. The more the bowels moved the more assiduously did she give the breast "to make up for the loss," as she explained. I found the child in a very weakened condition, with high temperature, foul, cheesy movements every few moments. Resort was had to cold sponging, prohibiting the ingestion of milk, in lieu of which albumin water and brandy was ordered. I washed out the bowels with warm saline solution and prescribed calomel, 1-10th grain tablets, to be given every hour. On my second visit I prescribed tannigen in three grain doses, to be administered every two hours, and continued the albumin and brandy water. The child im-

proved very rapidly, the bowels moved less frequently and were less foul; the fever subsided, and in the course of a week recovery was complete. After tannigen had made some impression on the bowels I diminished the frequency of the doses. The child tolerated the remedy in the amounts given without showing any by-effects.

Case VII. Baby, 18 months old, bottle-fed, suffering from ordinary diarrhœa for two weeks, was suddenly seized with violent purging and vomiting and marked prostration, the stools being thin and watery. The child was moaning and sleepless. Diagnosis: Cholera infantum. I ordered the suspension of food for 24 hours, and gave the child koumiss, 1 drachm, every hour, with some bicarbonate of soda. The following powders were also prescribed: Tannigen, gr. 3, sacch. lact. gr. 5, one powder to be taken every four hours. Small amounts of brandy were also given. The diarrhœa stopped in four days' time under this treatment, and the child made a perfect recovery. Fearing a relapse, I kept up the tannigen powders in diminished doses for four days after the subsidence of the diarrhœa.

Case VIII. Recently a case of phthisis in a man came under my notice in whom a profuse diarrhœa had been present for three weeks. I ordered the patient to cease his every-day food for 24 hours, except small quantities of beef tea, and prescribed tannigen in 5 grain doses, repeated every two hours. Although he had had 6, 7, and even 10 stools in a day previously, after 48 hours under the above treatment, the movements were reduced to two in number daily, and are no longer of diarrhœal character.

Case IX. Another case which I think worth mentioning here is one in which the patient, a woman, had a movement of the bowels after each meal. This annoyed her considerably, and she applied for relief. I put her on tonic treatment, and also gave her tannigen in 2 grain doses, to be repeated every two hours. I kept her on this treatment for two weeks, then discontinuing the tannigen and keeping up the tonic. She made a recovery in six weeks, and now has but one movement daily.

62 Boston street.

She—Have you never tried to make friends?

He—Oh, yes; that is the reason I have so many enemies.

THE COUNTRY PRACTITIONER AND WHAT HE CAN DO FOR HIS PATIENTS AS A SPECIALIST.*

By JOHN R. COOK, M. D., Fairmont, W. Va.

The specialist, as a money maker, a speculator or a quack, who stays but a short time in one community, and fools the people a part of the time, is not the man to whom I refer. Nor is it the country doctor as a horse trader, cattle dealer or a fox hunter; but the man who is absorbed in his profession and is determined to get there. It is the man who has the respect of people of the community and whose opinion is taken as that of a matured judgment and an honest decision; the man in the community who would rather have the confidence of the people, and to have them respect his opinion, than to have great riches.

Several hundred years ago there was a man who fell among thieves, was beaten and robbed, and lay out by the roadside unable to move. There happened to pass a Levite and a priest, each of whom paid no heed to the man's groaning and suffering. But the good samaritan—the first evidences of the country doctor—came along with his dinner bucket; recognizing the man's condition, he poured a part of his dinner on the bruises, and bound them up, with what, I do not know, but perhaps a part of his own shirt; and he had this man taken care of at a neighbor's hotel and paid for his keeping out of his own pocket. That sounds a great deal like the big-heartedness of the country doctor of today. Whatever he finds to do for the suffering he does it in the same generous way. If he did not, many patients would go untreated.

If you want to find a doctor who is practical, self-reliant and self-sacrificing, you will find him in the country practitioner. He should be the autocrat of his community, the backbone of society, and the adviser in the home. His services to the poor, as well as to those who fairly pay him, will make for him a crown that should cover him all over with glory. Put energy and hustle into the country doctor, and he can accomplish as much as, and in many cases excel, his city brother. It is true that he might not be doing so much surgical work as many in the city; but when he sends a case to you or calls you in consultation you can, as a rule, rely on his diagnosis. This diagnosis, however, must

be made early in many cases to be of much value to the patient. If he calls for you to see a case with him in which he says it is appendicitis, you might as well pack your grip for an operation.

With the present knowledge of asepsis everything in surgery becomes as possible in the rural districts as in the cities, and happily so; were it not the case, what would become of our emergency cases?

There are some conditions which are of such an urgent character that each physician should be a specialist in their recognition: Volvulus, twisting of the bowel upon itself, strangulated hernia, ectopic pregnancy, post-partum hemorrhage, and the last, but not least, a disease from which more people die throughout the country and cities than this enlightened day should allow—appendicitis.

Volvulus. Symptoms.—Sudden pain in the belly, vomiting and inability to get the bowels to move. If the twist is low down, we have great distention from gas.

Strangulated Hernia.—Protrusion of the gut, with pain, vomiting and inability to get the bowels to move.

Ectopic Pregnancy.—Collapse, rapid, feeble pulse, with palor; history of having missed a period; presence of a tumor in the lower abdomen.

Post-Partum Hemorrhage.—It is strange to say that these cases do not come to us all, but when they do come they wash the life of our patient away almost in the twinkling of an eye; and the most rational thing to do when we see a case bleeding, is to grasp the uterus from without with one hand, while you introduce the other hand and turn out the clot. You may give ergot immediately, but keep up kneading the uterus, one or more hours if necessary, until you get the proper contraction.

Appendicitis.—There is not a physician present who could not easily make the diagnosis. Notwithstanding we have McBurney's point to guide us, as a rule, we do find, in anomalous cases, the appendix situated sometimes up under the liver, sometimes over on the left side. And I want to say the usually supposed cherry seeds and other fruit stones are not found in the appendix, but this foreign substance is made up of fecal matter, which enters through the minute canal of the appendix in a liquid state, the water of the same being absorbed by the appendix, leaving the residue, which increases in size from time to time, and thus

*Read before the West Virginia Medical Association, May 26, 1903, Charleston, W. Va.

dilates the canal, producing the inflammation. There is no telling how many of us to-day sit here with a ball of fecal matter accumulated in the appendix, which is, as a volcano, ready to destroy our lives by an eruption at any moment.

Symptoms.—The sudden appearance of colicky pains around the umbilicus and in the right iliac, with some tenderness over McBurney's point, rigid muscles over the same area. Vomiting is usually present, but I have seen it absent from the history in many cases that came to my hands. In all acute cases of the first attack, however, we have the more violent vomiting, but in many of the chronic ones we may not get any history of the vomiting at all. The temperature usually runs from 99.5° to 102° , rarely above. Unless we have a general peritonitis, the temperature is not a constant guide, for I have seen the most formidable cases of general peritonitis with ruptured pus sac and the temperature below normal. The pulse is not a safeguard as to the condition of your patient, as it has no significance whatever as a reason to defer your operation, unless your patient is moribund, when you will find a rapid pulse, 140 to 150. Then you may, or may not, operate, as the chances are nearly all against your patient for recovery. However, I have made it a rule to operate even in these extreme cases and give the patient the only chance for life, regardless of the effect upon my reputation as an operator. In several instances I have saved a life in just such cases. In one case, when I opened up the greatly distended abdomen in a boy 7 years old, I found the abdominal cavity full of pus, the bowels rolled out, and they were so full of gas I could not return them without great force. I cut a small opening in the gut, let out the gas and a lot of fecal matter, then I irrigated as quickly as possible with a large amount of hot normal salt solution; then I introduced another quart of hot salt solution into the bowel, which I left in; then I introduced, also, a large dose of salts through this opening and sutured the gut, cleaned out the abdominal cavity and drained, so when I got my patient in bed he only had a slight carotid flutter, but in spite of this he got well.

In advanced cases you will find in the thin abdomen a fulness on the right side, just within the crest of the ilium, at which point you will also feel an induration. Were I to attempt to enter into the differential diagnosis where the

lines seemed hard to draw, say, that from typhoid fever, a microscopic examination of the blood, showing a greatly increased leucocytosis, will quickly decide that it is appendicitis.

Summing up the cardinal points in appendicitis, we have pain, rigid muscles or tenderness over McBurney's point, the pain beginning as a colicky pain around the umbilicus, and we usually have vomiting.

Preparation for an Operation.—Sepsis, antiseptic and asepsis—you can be as clean with your work in the country as in the city. It takes more work to convert a living room into an operating room, especially when we have not the assistance of a trained nurse, but we can, and must, do it. When we have a septic condition it takes a whole lot of antiseptics to render it aseptic, if you can indeed do it then. So the best thing to do is to clean up, rendering your hands, the area of operation of the patient and everything you use about the operation surgically, clean.

We now select a room in the house best adapted to our purpose; take a broom, brush down the cobwebs and dust from the ceiling, as we cannot afford to have dead flies falling in the wound. The floor should be without carpet and should be wiped up with a 1-1000 bichloride solution. All the tables and stands should be treated the same way. Then ring towels out of a 1-1000 bichloride and spread them on the table. Pans, bowls and milk crocks should be scrubbed with sand and soap and afterward boiled in a large boiler, or instead of boiling water, they may be rinsed out with bichloride solution, after which they are ready for use. Now, if you have not sterile sponges ready you can cut a sheet into pieces and boil ten minutes. A piece of boiled sheet may come in very handy at any time, so it is a good plan to have some ready. Your needles you may select yourself, but, as a rule, a patient in the country has pus already formed, and the wound does not have to be closed. You must have a small needle to close up the stump of the appendix. Your instruments should be a knife, a pair of scissors, six pairs of hemostats, needle forceps, two thumb forceps. You may have a pair of retractors—these are not necessary—but you need one long, scoop-like retractor for opening up, so that you may evacuate the pus from the cavity, and which enables you to slide your sponges easily to any point in the abdominal cavity. It is also well to

be provided with some silk-worm gut, should you happen to have a case that you can close up. Even then, I always sleep better for four or five nights if I leave a small drain down to the suture in the appendix stump. All instruments, silk and silk-worm gut, are boiled five minutes in water with a pinch of soda in it. Scrub your hands and arms up above your elbows for ten minutes in soap and warm water. Then, as to other solutions, there are several methods that are good. I am in the habit of using next permanganate potash saturated solution; then oxalic acid sat. solution; then bichloride solutions, 1-1000; then sterile water; then I operate, having cleaned area of operation same as my hands. Dr. Joseph Price, of Philadelphia, simply uses soap and water with mustard, then alcohol and sterile water, and I don't know of an operator who has better results. Dr. McNaughton Jones, of London, uses, after soap and water, 1-1000 bichloride in alcohol and water, then follows with sterile water. This detail is merely to show you what is absolutely necessary.

Your patient should not have even a glass of milk within four hours of the operation, as it is dangerous to the air passages, because of vomiting under anesthesia. The bowel should be emptied by a high enema before the operation, and the patient should have a hypodermic of strychnine.

On opening the abdomen in strangulation of the gut you will have to cut the band of adhesion of the gut, and if the gut is gangrenous you will have to excise the dead portion and make an anastomosis. In a strangulated hernia the ring is enlarged, the circulation of the bowel restored by towels wrung out of hot water, after which the bowel is returned to the abdominal cavity. If, on the other hand, the gut is dead, a more serious condition exists and an excision and anastomosis may again have to be performed, or, in some cases, it would be well to establish a fistula and let the patient get in better condition before the operation is completed.

In appendicitis, we have different conditions to deal with; the time of operation is as soon as you make your diagnosis, which should be early. We then cut down over the region of the appendix, and, as a rule, we find a sac full of pus, and perhaps the sac has already been ruptured, and we have a general peritonitis to

deal with. When I find this condition I proceed to mop it out as clean as possible; then I irrigate with many gallons of sterile water, or with a normal salt solution, one level teaspoonful to a pint; mop clean again, and in this way I get rid of the most of the poison, and if my patient has not already absorbed too much of the poison, with good drainage, he has a fair chance for recovery. After wiping off all of the lymph from the intestines as far as is possible to remove, and wiping the parietal wall of the peritoneum as far as I can reach, I usually place a gauze wick or two down into the pelvic cavity, then wall off the general peritoneum as well as possible all around the incision, leaving a stump of the appendix, as it were, in the base of my cofferdam.

Show me a man that is a success as a specialist and I will show you a man who is familiar with the general practice. I know of no better illustration of the opportunities and possibilities of the country doctor than to cite you the case of a man born in Virginia—Rockingham county, November 11, 1771, who had a little country practice down in Kentucky, and on the 13th day of November, 1809, performed the first ovariectomy, and thus became the father of abdominal surgery of the world. He did not know but in those days he might have lost his own life had his patient died after the operation. Then, too, he did not have the advantage of anesthesia, as we have to-day, but he was so thoroughly satisfied of his diagnosis, and that his patient needed this service, he risked everything to save the woman. The man of whom I speak is the world-famed Dr. Ephriam McDowell. We are free to acknowledge the fact that we owe much to our city teacher in medicine and surgery. It was from them we got our first inspiration, and get continuously much of what we know. We cannot all be teachers in universities; we cannot all be McDowells; we cannot all be Mayos of to-day, who is a country practitioner of Minnesota, and I venture to say he is one of the biggest surgeons of the world. Who of us have performed five hundred operations on the gall bladder?

Let each of us familiarize ourselves with the subject of diagnosis in order that we may sound the alarm at an early date, and ere twelve months have elapsed we will have saved hundreds of our West Virginian's young and old.

HEAT EXHAUSTION.

By WILLIAM F. WAUGH, M. D., Chicago, Ill.

Professor of Practice and Clinical Medicine in Illinois Medical College, etc.

The separation of heat exhaustion from true sunstroke is one of the most important points in summer practice, involving, as it does, the life of the patient; for the treatment applicable to either of these conditions would most infallibly kill the patient laboring under the other one.

The victims of heat exhaustion are most frequently fat, middle-aged men—victims of the ice-water habit. They begin as soon as they awake, and simply peg away at the ice water all day long, keeping their stomachs constantly distended with it. Free perspiration ensues, the sweat carrying with it the salts of the blood; the water that replaces the serum finally causes the red cells to swell and disintegrate; the pulse becomes weak, and thready, dyspnea occurs, and the patient falls in a faint. His whole frame is relaxed, skin becomes pale, cool and dripping, pulse almost imperceptible. If he is bled, ice is applied to the head, and the classic treatment of sunstroke instituted. He quickly succumbs.

The readiest treatment is by glonoin, gr. 1-250th to 1-125th, dissolved in a few drops of water and inserted in the mouth, quickly absorbed by the buccal mucosa. It is even more speedy thus given than when administered hypodermically. The effects may be noted within a minute—the face reddening and consciousness returning. Keep the patient's head low. As the effects of the glonoin are evanescent, atropine, gr. 1-250th to 1-125th should be administered simultaneously. The effects of the latter are manifested more quickly when glonoin is given, the latter opening up the blood vessels and permitting speedy diffusion. Atropine also causes an afflux of blood to the head, less promptly than glonoin, but the effect lasts several hours.

Meanwhile the general and profound vasomotor paresis is combated by brucine, of which a milligram, gr. 1-67th, may be given every half hour till the desired degree of vascular tonicity has been secured. Brucine acts more quickly than strychnine, and is, therefore, preferable here.

These attacks can readily be prevented. Begin with the vasomotor paresis, which, by allowing the serum to transude the skin, causes digress of the blood and thirst, which, in its

turn, is lashed to fury by iced drinks. Give these patients brucine, a milligram, gr. 1-67; and agaricin in the same or double the dose; taken together every hour during the day. Let each dose be taken with a tablespoonful of water, and forbid all other beverages, except four ounces of hot tea after each meal. Thirst may be relieved by chewing gum. This keeps the mouth and throat comfortably moist with saliva. Agaricin checks the sweating, while brucine meets the general and cardiovascular relaxation. The addition of a centigram of phosphoric acid (gr. 1-6), to each hourly dose of brucine, aids in restraining the thirst greatly, and is a useful tonic also.

A hot bath at bedtime is most grateful in hot weather, soothing the irritated nerves, equalling the vascular tension and disposing to sleep.

There is no reason why the unfortunate fat man should be uncomfortable in the dog days, if he is taught how to avoid their dangers and to live hygienically. By the treatment herein described he may enjoy life and work when the thermometer shows temperature near blood heat, while his leaner neighbor is sweltering. All that is needed is a physician who has appreciated the simple problems of vasomotor conditions, and has learned to apply his therapeutics rationally.

1416 East Ravenswood Park.

Tetanus Antitoxin.

Our attention is called to the fact of the usual number of accidents from gunshot and cartridge wounds in the celebration of July 4th, and the number of cases of tetanus that result therefrom. While the immunizing dose of Mulford's tetanus antitoxin is about 5 c. c., hypodermically administered, the curative dose is about four times as much, and should be given as soon as even suspicious symptoms present. It should be repeated eight or ten times in rapid succession, while such spinal antispasmodics as morphine, chloral, eserine, the bromides, etc., are liberally administered. The H. K. Mulford Co. advise all orders for antitoxin treatment to be telegraphed "for human practice." Unbroken packages may be returned in ten days from time of purchase for credit.

SOME EXPERIENCE WITH DIPHTHERIA AND ITS TREATMENT.

By O. M. PATTERSON, M. D., Bastrop, La.

CASE 1. On June 26, 1901, I was called to see A. H., age about 5 years (female), who had had a chill, followed by fever, and after the fever had lasted a few hours she had spasms. I examined her and diagnosed intermittent fever and prescribed accordingly, with the promise that I would call next morning, which I did, and found the patient's temperature about normal.

Just before taking my leave, the mother said she had complained of her throat. I examined it and found a small white ulcer on one tonsil, with some redness and swelling of adjacent parts. I prescribed a gargle, together with a continuation of the antimalarial treatment.

On July 4th the father reported that he did not think the child worse, but its throat was swelled externally considerably. I hastened to see the patient and found her no better, but gradually growing worse. The membrane in her throat had spread to the other tonsil, and the glands of the throat, externally and internally, were swollen, and she was very nervous and irritable, and the inflammation kept spreading until the entire pharynx and both nasal fossæ were covered with the membrane. All this time I was trying to make out a diagnosis. There had not been a case of diphtheria in our town in years. In fact, it had been so long ago that even our oldest physician could not remember when the last case had occurred. But as I could not satisfy myself as to what I was dealing with I called in, first, a young physician fresh from college, to diagnose, but he could give me no light. I then called in an old doctor, with the same result.

During this time I was treating the patient as best I could. We had had a good deal of scarlet fever, and each of us would invariably try to find scarlet fever. Finally, I had an idea that it must be diphtheria, but too late to do my patient any good.

CASE 2. A sister of No. 1 was taken sick August 1st (she being about 2 years of age) similar to her sister, with fever of a mild type and a small white ulcer or patch on one tonsil and it began to spread, as in the other case. As I had gained something by my former experience I at once diagnosed diphtheria and ordered from Messrs. Parke, Davis & Co. anti-

toxin syringe and serum, and at 5 P. M., on the third day, I injected 1000 units of antitoxin between the scapulæ. In half hour the little patient was resting quietly, and so continued through the night and by next morning she was clear of fever and you could see that she was much better. She continued to improve without interruption, and without a repetition of the antitoxin.

CASE 3. A boy about 6 years was taken sick in town and his physician suspected diphtheria. Knowing that I had had some experience of late with it, I was called in consultation. The boy had been sick four or five days with fever and sore throat. I examined the throat and found both tonsils ulcerated and much redness and swelling of adjacent parts. I diagnosed diphtheria and he was treated accordingly, with same results as the last patient—to-wit, 1000 units of antitoxin injected between the scapulæ about 5:20 P. M. This patient was rapidly growing more irritable, nervous, temperature rising, and to all intents and purposes, the disease was rapidly advancing. In neither of these two last cases was it necessary to repeat the antitoxin, as the temperature was normal by next morning and there never was any further rise of temperature, and the membrane gradually sloughed off and both made rapid recoveries.

Now, the items of special interest in all these cases are these:

1. The source of contagion. This first case lived in a remote part of the country, three miles from town, and, as before said, we had not had a case of diphtheria in several years.

2. All these cases had pharyngeal diphtheria.

3. The promptness with which they were relieved by only one dose of 1000 units of antitoxin. In the last two cases antitoxin was relied on as the remedy, and in my hands it has proven to be a reliable one.

Now, the reason I wrote this paper is this: I thought that possibly some of my doctor friends in small towns might have a similar experience and possibly my article might cause them to be more alert, as we must be constantly on the lookout for these diseases that come unaware, and we all know that upon a correct diagnosis depends correct treatment.

Now, as I read a similar paper to this at our Louisiana State Medical Society, I thought I would give you the benefit of the discussion of this paper. The main discussion was on two

points: First, early diagnosis. If we are in doubt send a specimen of the sputum to a reliable bacteriologist and have the test made at once; or if the case is suspicious and have not time for bacteriological report procure anti-toxin and use it. It will do no harm.

Second, as to dosage. Dr. Fenner, of New Orleans, who has had considerable experience with diphtheria, is of the opinion that small doses are not so reliable as larger ones. Even in children or 2 or 3 years old he uses 3000 units and repeats in six to eight hours, if necessary, and he brought out something in the discussion that I think all physicians should know, and it was that anti-toxin was as good for membranous croup as it is for diphtheria. I mention this fact, because such an authority as Dr. Gilman Thompson (*Text Book of Practical Medicine*) and some others affirm that diphtheria "antitoxin has no effect upon pseudo-diphtheria," or membranous croup.

NOTES ON SYPHILIS.*

By PRESLEY C. HUNT, M. D., Washington, D. C.

So much has been written on this disease, both true and false, that it is with great temerity that I offer this short contribution.

I do not intend to confine myself to any special department of the disease, but simply give notes that I have made from reading and observation. This disease is especially seen by the young man or the specialist, but every practitioner has a goodly number to observe, treat and advise.

Syphilis is a contagious, inoculable disease, transmissible by heredity. Whilst the actual cause is not known, it is without doubt due to a specific micro-organism. It is communicated by contact of the infectious principle of syphilis with a surface in a healthy individual from which the epidermis has been removed. The origin of syphilis is unknown. It was recognized by the Chinese and Japanese long before the Christian era. It was epidemic in Europe about 1493, and Hyde states that syphilis existed in America before the time of Columbus. A person who has syphilis is im-

muned from a second attack, and this immunity exists for years, and generally for life. Personally, I have never seen a second attack.

Syphilis is only contagious from the blood, and discharges from its lesions in the first and second stages. The physiological secretions do not carry contagion in any stage of syphilis. The contagiousness of syphilis may exist for two years, almost unknown after three years, and according to Hutchinson, there is no recorded instances of its having taken place after five years.

It is therefore safe to favorably advise the marriage of syphilitics after an interval of four years' time from the appearance of the chancre. The tertiary form would contr-indicate marriage, not from any danger of conveying the disease, which is impossible, but would indicate great danger of bringing into the world children of lowered resistance power as is often noted among children of tubercular parentage.

Whether the contagion be derived from the discharge of a chancre, from that of a mucous patch or from the blood of a syphilitic, the primary lesion at the seat of inoculation is a chancre. The contagion may be either immediate or mediate.

The period of incubation is about three weeks, and while cases have been reported of a chancre occurring one, two and three days after exposure, for practical purposes, these may be disregarded and only sores appearing after ten days from the time of exposure may be looked on with suspicion. In private practice, according to Fournier, the frequency of chancre as compared with chancroid is about three to one, while statistics of the past ten years of the large Parisian hospitals show that chancroid comprise 80 per cent of sores.

About six weeks after the appearance of the chancre the secondary symptoms may occur, as follows: Fever, anæmia, neuralgic pains, and syphilides of the skin and mucous membranes. This stage lasts from twelve to eighteen months, and is followed by a period during which the patient is entirely free from any sign of syphilis. This stage may terminate in complete recovery or be followed by the tertiary stage, characterized by the formation of gummata or by diffuse infiltration of various organs as chronic periostitis, tuberculo-ulcerous skin diseases, disease of the nervous system, etc.

In the vast majority of properly treated cases the tertiary stage does not occur, and while it

*Read at a meeting of the Medical and Surgical Society of the District of Columbia, March 5, 1903.

may occur at any time subsequent to the chancre, this stage is most apt to occur in the third or fourth year following the primary lesion. The diagnosis should never be made on a suspicious sore alone, and treatment should not be commenced till a correct diagnosis be made. In over two thousand cases that I have seen the epitroclear gland was enlarged in 30 per cent. of the cases—the enlargement of the gland is believed to be pathognomonic of the disease.

The general adenopathy following a suspicious sore is diagnostic as well as the roseola appearing about forty-five days after the appearance of the primary lesion. The first effect of syphilitic infection is a gradually increasing accumulation of leucocytes at the site of inoculation; these contain the germs of infection; they travel on through the lymphatics, enter the receptaculum chyli, and are finally emptied into the general circulation, the infected cells going to all parts of the body and causing marked cell proliferation.

Syphilis at present is a mild disease, the tertiary stage being extremely rare. This is due, without doubt, to the more methodical and thorough treatment. What methods should be taken to limit the spread of this disease has long been a vexatious question to answer. In the first place, there is a more general public knowledge concerning the gravity and prevalence of the disease. The regulation of prostitution by law; the establishment of institutions or special wards in hospitals for the care of the poorer cases; instruction of barbers, chiropodists, etc., of the dangers of conveying this disease, and the sterilization of their instruments, circumcision and local cleanliness—all of these contribute to the lessened frequency of the disease.

Is syphilis curable? This question may be clearly and positively answered in the affirmative. A few cases under good care and treatment, without known cause, may develop some one or more of the tertiary lesions.

Haslund states that 12 per cent. of all cases developed tertiary symptoms, but that in 791 cases of tertiary lesions 231 had received no treatment, 461 partially treated, and but 99 had pursued treatment to a cure. According to the above, syphilis is curable in over 98½ per cent. of all cases that are properly treated.

Excision or destruction of the chancre is indicated when it is seen early, within the first five days of its appearance, and in such a situ-

ation that no troublesome hæmorrhage, deformity, etc., is produced. Fournier believes that excision gives an average of one success in five cases, and White reports five successful cases out of nine.

It should be remembered in this connection that there are a few well authenticated cases in which the chancre was not followed by further symptoms.

I desire to report the following:

M. C.; white female, 20 years; family history as far as obtained good; personal history good; was exposed September, 1901. On the sixteenth day a suspicious sore appeared on right labium, and was followed after thirty-eight days by a slight enlargement of the inguinal glands, both sides. From that day to this, after repeated examinations, I have been unable to observe further symptoms. The man who gave her the disease, presented secondary lesions of the skin and mouth.

1815 M street, N. W.

SOME OBSERVATIONS ON THE TREATMENT OF PULMONARY PHTHISIS IN PRIVATE PRACTICE.*

By H. J. CHAPMAN, M. D., San Antonio, Texas.

The problem that confronts one in the treatment of cases of pulmonary consumption in private practice is a somewhat different one than the care of same in sanatoria. With my increase of experience I am the more impressed with the great necessity of a complete supervision of habits without which many, if not most, cases will not do well, no matter what treatment is used or to what climate they are sent.

Speaking broadly, all cases that show a temperature of over one hundred degrees should be kept at rest at least during the hours of fever, and better still one hour before the expected rise. The old advice to live out of doors and take all the exercise possible has been vastly overdone and too often literally followed. An out-door life is one of the great essentials, but it should be so regulated as not to exhaust the patient in his search for sunshine and fresh air. Each case must be separately studied, the amount and

*Read before the Texas State Medical Association, May 1903.

kind of exercise prescribed, bearing in mind the strength of the individual, his previous habits, his fever and the effect of exercise on the heart. An old rule that I am apt to give patients is this: do not do anything that exhausts you or causes shortness of breath.

Another problem that is hard to solve and constantly presents refers to the matter of diet. It is easy to tell your patients to eat all the easily digested and nutritious food possible, but that is not sufficient. One must individualize and study the needs of each patient and ascertain if directions are intelligently followed, guarding against the errors of stuffing on the one hand, and lack of good food on the other. Forced feeding is often of great value, but must have the supervision of the physician or the digestive organs will rebel and we will lose more than we have gained.

Ventilation is another item that demands attention. Most lung patients are especially afraid of fresh air, and have to be strictly instructed to be in the open air during every hour of daylight, and in this climate should accustom themselves to sleep on porches, or at least in rooms with every window open.

Climate is a most valuable adjunct, but it has been demonstrated many times that a large per cent. of early stage cases will recover at their homes if placed under hygienic conditions and made to live right. The results in some of the sanatoria located within a few miles of some of the large cities afford ample proof of this assertion.

And right here I wish to call attention to one fact, which, while hardly germane to the subject, is of great importance, and that is the educational value of sanatoria. This is not confined to the patients themselves, but makes its influence felt from many centers by means of the recovered cases. Germany is foremost in this movement, and has proved that it is much more economical to the State to assist in the recovery of early cases than to allow them to progress and become a menace to others. I trust the day is not distant when our National Government will do as well.

I wish to add a few words on *treatment*. In the search for a specific for tuberculosis we have expected too much. We have too often sought for a remedy that given to the poor consumptive and, lo, he is well. We have a very complex problem to solve, and must realize the limitation of remedies in this as we do in

other diseases. One would hardly expect quinine to cure an abscess of the liver or spleen complicating a case of malaria. Nor would we condemn the remedy if the patient should die of septicæmia while he was also suffering from malaria.

During the last eight years I have used nearly all the specific remedies in this disease, including the old tuberculin, antiphthisin, purified tuberculin, oxytuberculin (Hirschfelder), watery extract (Von Ruck) and several serums. Of these I regard the watery extract as the safest and best. It is certainly a great aid in the successful treatment of tuberculosis and gives results which, from present indications, will, in many cases, prove permanent.

A few words as to the value and limitations of Von Ruck's "watery extract" may not be amiss. There is no doubt that it has a positive specific action on living tubercle, and I have often seen partly consolidated lung areas, which showed decidedly dull percussion note with bronchial breathing, return to normal under its use. It must, however, be remembered that these cases were under good climatic and hygienic conditions during administration of the specific remedy. On the other hand, cases which improved under care and climate—the so-called climatic cure—more properly speaking "latencies"—are very prone to recur. The active manifestations are gone, but the infiltrations are still present, ready to spring into activity if favorable conditions are supplied. Specific remedies can have no action on dead tubercle, and it is the difficulty in differentiating between living and dead tubercle that makes prognosis so difficult. It is often a matter of months to be able to determine whether a given infiltration would be reorganized or would break down and be expectorated.

During the time of liquification of tubercle and formation of cavities we have to deal with essentially a case of septicæmia, and it is only by attention to hygiene, by careful feeding and the use of tonics that we can support the patient during this trying period. Specific remedies cannot modify the course of this process. It can, however, bring about an artificial immunity which, in addition to the natural immunity of the individual, will prevent farther extension of the disease, and with this increased immunity we often note the disappearance of tubercle, which otherwise would have broken down. In other words, this remedy has enabled

one to bring about a recovery in cases which, in my opinion, would otherwise have proved fatal.

Creosote and its derivatives have enjoyed considerable reputation as a remedy against tuberculosis, but I think they are chiefly of value in the treatment of the symptoms. Being partly excreted by the lungs they modify the secretion, prevent putrefaction and assist in expectoration. They have the disadvantage of deranging the digestion and must be used with caution.

Much could be said in regard to the treatment of the various symptoms as they arise, and our success or failure very often depends on our care in meeting the various unfavorable manifestations. But in conclusion, I will say but one word. In the successful treatment of phthisis we must bring to bear upon our patient every influence within our power for his good. Make him live right and do not depend upon treatment to the exclusion of hygiene.

Hicks Building.

SUCCESSFUL CASE OF PIG SKIN GRAFTING.

By WM. FLEGENHEIMER, M. D., Richmond, Va.,
Formerly Resident Physician to the City Hospital.

Mr. At—, age 30 years; an employee of Gallego Mills, had his arm injured by the cog wheels of some machinery. It was lacerated from the shoulder nearly down to the wrist, drawing away the skin and subcutaneous fat, the area exposed being about one-third of the surface of the entire arm and forearm. The skin, subcutaneous fat and connective tissue covering the anterior and internal surfaces of the elbow joint and that of the biceps muscle was completely torn away. His wound was dressed at the scene of the accident, after which he was placed under my charge at the City Hospital.

After treating the arm for about two weeks with the ordinary (antiseptic) method, and getting the usual result—that of healthy granulations—we decided to graft skin upon it in order to avoid the contraction of so much scar-tissue.

It was not possible at that time to procure enough human skin for the purpose, and having heard of Dr. Stuart McGuire's case of pig skin grafting, we determined to try the experiment.

The patient purchased a five-weeks' old pig, to which we administered chloroform, and after

cleaning and shaving its belly, we dissected more than enough skin necessary to cover the exposed surface of the wounded arm. The grafts were irregular in shape, in size varying from that of a silver dollar to a dime, and were of the *entire thickness of the skin*. As fast as the grafts of skin were removed from the pig, we would trim off any of the subcutaneous fat accidentally left upon them, and place them in a vessel containing normal salt solution. The only preparation the wound received was mild irrigation of a 1-3000 bichloride solution, followed by one of normal salt solution. It was then thoroughly dried and the pig skin grafts placed upon it. The grafts were held in place by a layer of sterile gauze saturated with Bovinine, layer of cotton over this was covered by oiled silk and a flannel bandage.

This dressing was removed seven days later, and at that time it seemed that every one of the grafts had taken firm hold. Later on, however, some of them disappeared with the removal of the numerous dressings. At the present time the wound has completely healed, and strange as it may appear, it has a nice growth of fine hairs upon it.

9 West Grace St.

Pepto-Mangan (Gude) in Anaemic Conditions.

Dr. Fritz Euler-Rolle, of Vienna, says (*Wien. Klinische Rundschau*, March 29, 1903), this preparation contains (besides iron) manganese, which is of importance in the formation of blood. The iron and manganese are in a neutral solution. Hence we may submit every case of chlorosis to it, irrespective of the condition of the gastro-intestinal tract. The peptone it contains acts as a nutrient. It is well known that all peptones and albumoses stimulate more or less the mucous membrane of the intestine, and therefore, in large doses, may give rise to frequent fluid stools. In pepto-mangan the nucleins are completely absent; hence its value in the treatment of the uric acid diathesis, since all nucleins increase the formation of uric acid. During its administration no unpleasant by-effects have been observed. The author made 25 experimental observations in the use of this preparation, and established its positive value in anaemia, chlorosis, etc. Manganese is, perhaps, the best of oxygen bearers that can be administered. It is best given with milk or wine.

THE MINERAL, ANIMAL, VEGETABLE AND SPIRITUAL KINGDOMS OF FOOD.*

Indispensability in health—Causal and cural in disease—Impossibility of life on one kingdom alone.

By EPHRAIM CUTTER, M. D., LL. D., New York, N. Y.

1. *Mineral Kingdom Food.*—When man first appears in this world the wonderful changes in the umbilical and cardiac circulation necessitate breathing. Pure air is inhaled, and exhaled impure from CO₂, H₂ O, and other products of respiration. The atmospheric oxygen combines with the blood, not only as a purifier, but as an element of that fluid tissue indispensable to life, and hence a food. It is difficult for me to believe that air, nitrogen and argon enter not as foods in the breath, but it has not been proved, and I hope that the honor of proving this may be had by some one connected with this college.

As air is a mineral it must come in the mineral food kingdom. No man, woman nor child lives airless. All mankind breathe. When breath leaves the body it is dead. Thus the question of *indispensability* of air food is settled at once.

Does air produce disease? Bad air is universally acknowledged as a cause of disease. This badness may depend on the lack of sufficient amount of watery vapor (steam) in the air that dries the mucous membranes of the respiratory tract and dries the skin, specially in very hot weather and less so in cold weather. When hot air has too much water—*i. e.*, humidity—then it becomes almost intolerable and causes suffering known to the public. Air also has a rich morphology—that is, its forms of life and minerals visible under the microscope and revealed by sunbeams in a dark room—that are supposed to carry disease, but which power seems to be controlled by the good health of those who breathe such air. At any rate, the advantages of fresh, pure air are thought worth paying immense sums of money for, as seen in the extensive park system of Boston, for example; summer migrations to mountains, seashores, oceans, forests, wildernesses and in the large hotels, expensive mansions, cottages, tents, boats of all kinds and railroads and vehicles to carry peoples where they can eat fresh, pure

air food. This ethic goes back and beyond the old Roman civilization.

Pure air therapy is much used by the profession as above and additionally in thorough ventilation with success.*

The use of outside living rooms and chambers for sleep by consumptives is a fine example of pure air therapeutics.

"Colds" are commonly attributed to drafts of cold air. But the perfectly well do not always take cold thus. It is those whose vitality is lowered that take cold easiest. This lowering is often due to fermenting vegetable food in excess within the alimentary canal. For instance, eating a hearty pork and baked beans supper has been followed by colds on exposure. So also a first-class banquet with plenty of champagne full of CO₂ gas. Such foods all paralyze the alimentary canal more or less, so that when the skin is chilled and the blood thrown into the interior, there is congestion and a physiological circus we call "colds" for want of a better name. Patients on a strict beef diet rarely take cold, even when all the rest of their families do.

Water is a mineral kingdom food. As we must have water in our atmosphere so must we have air in our water to drink. Non-aerated distilled water is miserable stuff to drink. Go over the United States government reports and there is not an article of animal or vegetable food analyzed but has a very large per cent. of interstitial water. A low estimate puts the proportion of water in our bodies at 75 per cent. As it is evident that man cannot live without water in his tissues, it follows that water, a mineral food, cannot be dispensed with by man. Does water cause disease and death? Yes, when improperly used. People die from drinking ice water sometimes. It is said that some Filipinos and others have been killed by the "water cure" torment among the hells of war. Hold men under water for five minutes and few survive. Again, water is the carrier of the germs of typhoid fever, cholera, etc. Well water may be more or less filled with fungi and dead, decaying animals and plants. Common sense teaches that these troubles are not due to the water, but to impurities and abuse.

*A lecture at the College of Physicians and Surgeons at Boston, April 27, 1903, from the Chair of Clinical Morphology and Applied Medicine.

*I think that ventilation in ordinary rooms is best had, even in the worst cases of sickness, by throwing a light covering, as a thin shawl, over the patient's head in bed, opening every door and window at once, and, as it were, swashing out the bad air. Then close up before the walls are cold, if in cold weather.

If we could discard water on these accounts it would be as unwise as to discard knives in surgery or in carving meats because some fools have knifed themselves to death.

The sentiment is endorsed that if you cannot have but one thing to use as a medicine (owing to the inability of patients to receive) hot water is the best therapeutic to select, because it promotes downward peristalsis—causes the stomachic and intestinal muscular fibers to contract when more or less paralyzed and distended by gases—washes out the alimentary canal and its adnexa liver, spleen, pancreas, kidneys—dissolves out crystals that have formed in the blood and that are the essence of rheumatism; thins the blood to normal consistency so as to flow freely through the capillaries where the greater part of life's functions go on—the blood is deoxygenated, secretion is performed. The length of said capillaries moderately estimated in an adult man must be over one hundred thousand miles, and being everywhere one-three-thousandth inch in diameter gives only a lee way of one-forty-eight thousandth of an inch to the average red blood corpuscle as it passes through them.

Lukewarm water is a good emetic, as it promotes upward peristalsis. Why this is so we know not.

Cold water chills what it touches and has to warm to the normal temperature before being of much use, save as a diluent and cooler; is good when a robust person is heated and hungering with thirst; and what is better than water to quench this terrible tormenting, all-pervading feeling we call thirst?*

As I have previously shown this college on the screen the crystals of rheumatic blood in proof of what is here said, let me affirm that these crystals could not have formed at all, save from a menstruum or solution that did not have water enough to keep them dissolved. In other words, the writer believes that if rheumatics previously had drunk water enough to normally run their bodies, that these crystals, normally in solution in their blood, would not have formed and caused said rheumatism.

*Thirst is difficult to explain. Perhaps I might venture to say that I think the solar plexus, located at the epigastrium, governs the functions of digestion, one of which is to keep the blood at the normal specific gravity needed for the functions of osmosis in the body. So when there is not water enough, as from long abstinence or eating too much salt, then the solar plexus clamors for the needful water. This clamor we call thirst. It is a wonderful provision of God to maintain life.

Do not make the mistake of confounding locomotor ataxia with rheumatism, as is constantly done. The diagnosis of rheumatism is finding said crystals in the blood. This subject is such a practical one that I may perhaps illustrate it by concrete examples:

Some eighteen years ago an invalid lady came to me with all the signs of acute rheumatism. Her blood presented crystals, fibrin filaments much enlarged, network close meshed; red corpuscles sticky, adhesive, huddled together in massive ridges or in rows. Hot water was a large part of her treatment. She was to take one pint one hour before each meal and on going to bed. But she found so much relief that she drank about two gallons in one day. Next morning she said she could feel the gravel on her skin. The water had dissolved it in her sweat. The sweat had evaporated and left the crystals on her skin. She remains cured of rheumatism. The morphology of the skin in this complaint often yields crystals in abundance—nature's effort to eliminate and cure.

A case of more difficult environment: An English coal heaver, 40 years old, was stranded in New York with chronic rheumatic arthritis. His joints were so ankylosed with crystalline deposits, thickened fibrous tissues, and dryness that his wife had to tend him as if an helpless babe. The good people of our church attended to his physical wants, my wife amongst them, who told me about the case. I visited him, not being called. His blood presented crystals, enlarged fibrin filaments, massed red corpuscles in rows and ridges. Asked if he wanted to be cured, the man said he did, but would not take any medicine, as he had spent his whole substance in trying to get well on medicines warranted to be "sure cures."

The situation appeared hard to meet—no faith in medicine nor doctors, no means to get any but pauper attendance, if he would have it; little in the house to eat, but a plenty of croton water to drink. The man was told: "You need not take any medicine, but I want you to be sure that you drink daily 2-4 gallons of croton water cold (as he had no fire). I want you to wash out those beds of crystals from your joints and stop their forming in the blood. (Distilled water would have been better, but it was out of the question.) Eat what you can get. (No use in prescribing anything else.)" The man did so, and improved so that he was at work on wages shovelling coal in one month's time. He could not have done this had

not a good part of the depositions been washed out from his joints so that they could move.

People have come to me and said: "We have used the hot water without any other medicine and we have been cured of rheumatism." One was an eminent lady that some years ago had to walk with crutches. Now she is crutchless. Of course, it was nature that cured by means of the water, simply because nature is trying to cure all the time, and when her laws are violated she will not, cannot cure. One law is, (to repeat) there must be water enough to keep the mineral salts in solution. A specific gravity of urine 1015-1020 should be maintained in patients, because then there is little chance of crystals being deposited in the system and because it gives blood of normal density.

Another thing: patients who drink one pint of hot water one hour before each meal and on going to bed rarely thirst, even in the hottest of weather, between meals.

The work of the heart to run the blood through the one hundred thousand miles of the vascular system is very much lessened when this amount of hot water is daily drunk. Thus you have one great means of reducing an hypertrophied heart. If this was generally known and practiced there would be much less prevalence of death from heart disease. Said hearts overgrow and become diseased because overworked by pumping blood too thick from lack of systemic water.

This is an item in the physics of physic that is worth remembering by all who undertake to treat disease anywhere.

The last mineral food we have time to mention is *salt* (sodic chloride), which is found in every tissue of the body. Tissues without salt would not be tissue. No person excludes salt from food, for it is impossible to do so.

Like water, if overused or abused, diseases of nutrition follow. To quote a single instance of comparative physiology: Twenty kine were wintered on hay feed, water and salt. Twenty other kine were also wintered by the side of the first twenty on hay feed and water. In the spring the salt-fed kine came out in fine health. The saltless kine came out with the loss of their hair—that is, their hair fell out all over.

Scurvy comes from excess of salt food.

In plant biology the soluble mineral salts (manure) must be fed in proper proportions else disease and death follow, as the United

States Agricultural Experiment Stations show.

2. *Animal Kingdom Food*.—Since Adam, all mankind came from animal parents. The first food provided by the Creator is milk—an animal food. Normal human milk is universally conceded to be normal food for infants. Jesus Christ, the God-man, took this normal food, else Joseph could not have carried Mary and her babe, less than six months old, on an ass to Egypt by night to escape Herod. Others in the Bible list of milk eaters are Isaac, Moses, Samuel, Loruhamah, not to overlook the Pharaoh of the Exodus, whose intaglio was not long ago given to the American people, representing him 17 years old standing and sucking the breast of the Goddess Isis, as he wanted to be considered a god—*i. e.*, Isis's son. It would have done just as well to have had Pharaoh depicted at the age of 17 months. Hence, we infer that human lactation was then carried almost out of the child's teens.

Baron Kuki, late Japanese Ambassador to the United States, said that it was common to see 10-year-old children at the breast in Japan. It may be so; but probably artificial infants' foods were not used before our era, as they are not mentioned in history, to my knowledge. All nascent infants are entitled to normal breast milk. If not had they are cheated of their precious birthright in motherhood. It should be said that a diet of two-thirds by bulk of animal food to one-third by bulk of vegetable food has been found by the writer the best cure of agalaxia.*

Cream, butter, cheese—derivatives of milk—if dispensed with would be much missed, specially by the agriculturalists, who form the chief bulk of our population. Also eggs, beef, mutton, pork, poultry, fish, game, shell-fish, dispensed with would make a bad showing for the nation's finances, as these figures, from the 1901 report, United States Agricultural Department, show value of cattle \$1,700,000,000. The United States Crop Reporter gives the value of our farm animals, January 1, 1903, at \$3,102,515,540. If these were not used as food the depreciation of values would bankrupt our nation.

And yet some say that the animal food kingdom must not be used.

Further: The great natural divisions of animals into carnivora and herbivora directly

*As second witness, see *Food in Motherhood*. E. Cutter. David Stott. London, 1890.

show the indispensability of animal food for animals, while there are some carnivorous plants besides. Just here let me lay down a therapeutic law—*i. e.*, carnivora have small alimentary canals, relative to herbivora. To reduce man's enlarged thickened intestines let said man live on animal food. Don't forget this in your practice.

Supposing carnivora live as herbivora, one may learn what would be likely to happen from the experiments of the late very distinguished Dr. Joseph Jones, of New Orleans. Carnivorous turtles fed on parsley at their autopsies showed fatty degeneration in their tissues. It is difficult to see how the kingdom of animal food can be done away. The Eskimo (meat eaters) would not thrive much on vegetable food alone. Arctic explorers testify that their health was fine while living on meat. Nansen was one witness.

Let us now inquire about the relations of animal kingdom food to disease.

Causal.—Tenia come through beef, fish, shell-fish; trichina come from the hog; ptomaines from decaying animal food, etc. Animal food overeaten is liable to ferment with the growth of the yeasts peculiar to them and produce H. S.: P. S. that paralyze parts near and remote, and cause diseases of neurasthenia, with or without organic changes, to name no more, save that vegetarians charge nearly all the diseases of mankind to animal food.

But it should be remembered that all food eaten ought to be in a normal condition, properly cooked or raw—biologically fit to eat. In other words, used with human and animal common sense. Diseased animals, such as those who have nephritis (so-called) or Bright's disease of the kidneys and (it may be added) lungs, are not here regarded as man's proper food, and the allusions in this presentation *always imply food good and sound in quality and quantity.*

Beef and mutton are the best animal foods. Cod is the best of fish. Clams, soft (*M. Arenaria*) come very close to beef. A great deal depends on the freshness of animal food. Unless half cooked, keeping deteriorates their qualities for the most part. Cold storage has helped this much. It is not modern. Some years ago a behemoth was found in Siberia imbedded in a glazier, it was said, for 3,000 years. Still its meat was good, and eaten at a banquet by savans in London with no bad results. Animal

food can be lived on longer than any other food, as a rule. Kit Carson, the erst famous Rocky Mountain guide and hunter, lived on beef and water indefinitely in health. So do the cowboys of the South American pampas, among whom Sir Francis Head, an English nobleman, travelled in 1825 with a retinue of thirty servants supplied so that his French chefs could furnish home cooking. But seeing how well the cowboys fared on beef and water tried it himself. He said the result was that he felt no exertion could kill him! Such was the vital dynamics conferred thus.

Dr. Livingston said that the Makalolo warriors (carnivora) took as servants herbivorous Africans on their forays. The latter would lie down and die from sheer fatigue, while the former would go on tireless.

This leads us to say that *heartly food* is for the heart. Beef is such. Curious that it is not more used in the treatment of heart disease. Our limits admit only of facts to show why the animal food kingdom ought not be rejected from heart treatment. I deem this idea one of the greatest contributions to medicine of the nineteenth century, as the cases show.

More than twenty-five years ago a middle-aged wife had twice the normal area of cardiac dullness on percussion; heart's sounds heard over same area; prolonged murmur over the left auriculo-ventricular valve; frequent severe paroxysms of pain in heart running up to the shoulder and down the left arm; shortness of breath; face anxious; breathing difficult. She said it felt as if she was in the grip of a giant's hand on her chest. (*Angina pectoris.*) Her husband, a physician, daily expected to find her dead on his return from his rounds. Beef—sound, good and lean—was the main agent of treatment, yet she lived twenty-two and a half years afterwards. About four years before her death from locomotor-ataxia, a physician of San Louis Potosi happening where she was, was asked to examine and tell what was the matter with her heart. He did so, and said he could find nothing wrong with it.

A granddaughter of the above case 18 years old, three years ago presented the physical signs of hypertrophy and mitral valve lesion, and recovered on the same diet.

Next is a case of fibrinous concretion (erst called polypus). Diagnosis: Double area of dullness on percussion, and heart sounds muffled, indistinct, and hard to make out;

seizures of cardiac asthma, in which death was imminent; left radial pulse one-third less in volume than that of the right, etc. Beef—sound, good and lean—was the main food in treatment. After a time the area of dullness was much reduced, the normal sounds returned, the radial pulses became equal, and the patient, a policeman, felt so well that on his own responsibility he undertook night and day work (too much for any one). The diet was not kept up, the signs of the concretion did not reappear, but the hypertrophy did. A return to his former physician and diet was made too late. He died.

Allow a personal reference. My parents both died suddenly of heart disease. Symptoms of enlargement and other signs have been found in my own heart. Animal food has kept them in abeyance.

Fistulous Pleuritis.—More than twenty years ago a middle-aged hotel keeper had a large fistula in the lower third of the right chest outside, some two inches long and half an inch wide, continually discharging pus. He was put on a diet mainly of lean, good, sound beef (landlords know how to select it) and went South to an hostelry. Four years afterwards he was reported cured.

A like case of a single woman who was treated with the special care of a sanatory was discharged cured in about two months. Both cases had been advised to have their ribs resected, deforming their chests. But how much better they were—cured knifelessly!

"*Frog felon*" is where a felon on the hand is so extensive and severe, burrowing deep in among the tendon fascia, ligaments and bones, and causing so much swelling as to remind one of a big bull-frog. Such was the case a few years ago of a middle-aged bachelor—a former patient of mine. While summering on the South Massachusetts shore he went out in a row-boat in the surf. A heavy wind came up and he injured his hand by rowing, took cold and started inflammation beneath the periosteum. His suffering was terrible, though his surgeon cut freely and deeply. The situation became serious and the prognosis was fatal. Then the speaker was called, approved of what had been done, but recommended one or two porter-house steaks daily, with clear tea or coffee for drinks. Nothing else. This prescription almost paralyzed those interested, but it was carried out,

and under the surgeon's skill the man got well with a much better hand than was expected.

I was once poisoned from a patient on the proximal phalanx of the right forefinger. Blood poisoning set in. The hand swelled much like the frog felon case. The digit was freely laid open. The sore was covered with an ointment of sulphate of quinine (5j to 3j) that relieved the pain that had circled the wrist as with a wall of fire (opiates were useless). Porter-house steaks, clear tea, coffee, or hot water were the only food eaten.

Later, at an autopsy, the proximal phalanx of my left little finger was scratched deeply red (but no blood drawn) by coming in contact with the sharp edge of the cartilage of the second left rib as the lung was taken out. This injury should have been treated at once with the ethereal tincture of aristol that I usually carry with me, but I had it not. So it went on and lasted for nearly two years with an umbilicated, hard and dense scab and looking much like an eruption of severe varicella. The beef was adhered to as well as could be, but sickness in my family and other hindrances interfered, so that for months it remained about the same callous umbilicated scab, surrounded by a skin of glistering, white, pale color. Finally I went to our cottage at Buzzard's Bay, kept on with the beef, bathed in the sea, dug gravel in the ground, burned the said scab with galvano caustic red-hot, without anæsthesia, and recovered.

Pelvic Areolitis.—Some fifteen years ago a young married woman was found with the fever, pain, and physical signs of pelvic abscess. Her local physician, from the gravity of the symptoms, foretold a recovery so partially as to render her a helpless invalid for life should she survive. He ordered gruel, but her father-in-law, a physician, put her on beef alone and evacuated the abscess when it was ripe by a solution of continuity. She is now a real queen of motherhood, active indoors and out. Not a vestige of pelvic cellulitis.

Another instance is that of a city lady 40 years of age; six years with a right pleuritic effusion; with chronic bronchitis, and anteversion and anteflexion. Treated on beef and whole wheat, clear tea, coffee or hot water. She was so well that she ventured out to do her 1901 Christmas shopping just after a heavy snow-storm; had to ride home on the step of an electric car. She presented the systemic and local signs of pelvic areolitis and was kept

on her diet in bed. She was given tonics and local analgesics. The abscess evacuated itself. Three months later there was found no evidence of its existence.

The effusion is lessened. Probably the thick chronic adhesions will resist all treatment, but under the circumstances her partial recovery is wonderful. (Mem. 1. Breath heard plainly below breast.)

Fibroid tumors.—Some years ago (in the *American Journal of Obstetrics*) the writer published a dozen or more cases of uterine fibroid mainly cured on animal food. Most of them are alive and well. One of the latter was a very interesting case of a physician's wife, whose fibro-cyst was enormous, enlarging her beyond normal pregnancy. In three months the tumor was just perceptible on palpation above the pubis. In the same way fibroids of the heart have been removed.

In accord with the law laid down above, that carnivora have small alimentary canals and herbivora large, and if man with enlarged alimentary canals lives on animal food, said canals become reduced. Let illustrations be introduced: E. G., a young girl, some ten years ago came to the writer as having stomach trouble that did not yield to treatment. Percussion showed continuous tympanites over the whole distended abdomen, even to the pubis. Auscultation revealed metallic tinkling of a large cavity. Succussion produced splashing sounds. At times there was vomiting of undigested food, dark colored and putrid. She was fed on beef solely, with clear tea, coffee or hot water. Salt and pepper were used sparingly as relishes. In time she came down to normal size and normal physical signs. She is now well and a wife.

A childless middle-aged wife suffered what was termed "gall stone colic." One stone was found. After this severe attack she had others, but no gall stones were detected. In consultation, she was found with her abdomen enormously distended; the chest was expanded; diaphragm pushed upwards. No hepatic dullness on percussion could be found. She seemed inflated, like a bicycle tire. The law above was quoted to the consultee, who put it in practice, with beef as sole animal food, clear tea, coffee or hot water as drinks. This was kept up more than a year. The canal came down in size to normality. The borborygmi came down in size to normality. The borborygmi and com-

motion of intestinal contents are well-nigh removed. For about thirty years previously she had painful menstruation; after this regime her menses have been painless. Lately she has had a few attacks of colic, due to overdoing in house-moving, entertaining guests and night disturbances in the flat overhead.

In this line come *intestinal strictures*, where the bowels are so thickened and enlarged inside as to diminish their calibre the same as if tied with a string. Sloughs of said tissue have been evacuated with hemorrhage more or less profuse. In one instance the specimens were put in a solar microscope and the blood vessels beautifully shown on a screen.

Ten years or more ago a clergyman brought to my attention the case of his son-in-law, another parson, who had been surgically treated for stricture of the rectum, and said that it was returning. The beef treatment was suggested. It was tried, and the father reported his cure a few years later. He was at last accounts in charge of a parish and during his work.

Chronic diarrhœa, or consumption of the bowels, is more common than thought to be. No treatment avails so much as that based on good, sound beef. It comes mostly from starchy and sugary food eaten in excess, and afterwards fermenting. The common alcoholic and vinegar yeasts do not attack sound beef, and hence one advantage. One authority considers all cases of tuberculosis to begin with the intestinal. The writer agrees. Those whose bowels resist successfully the entrance of phthisin (the essence of tuberculosis) into the blood are those considered here, and are remarkable for their long continuance; 1861 war veterans present instances—for example, a bugler had this disease in the army, and thirty years after was cured by good sound beef diet.

At the Berlin International Medical Congress, 1890, the writer presented a report of 100 cases of pulmonary tuberculosis treated mainly by beef diet. Forty-six were cures, most of them standing cured for ten years.

In December, 1863, Dr. Benjamin Cutter and son visited a man whose physical and systemic signs indicated tuberculosis of both lungs and pleuritic effusions. He was by them given up to die, but "as a bow at a venture," the son, finding that the patient had a fine hog in his pen, told him "to kill him and eat nothing else this winter." The man did so, recovered his health, to die a drunkard fifteen years afterwards.

Agalaxia restored by beef two-thirds and vegetable food one-third by bulk.—A multipara lost her breast milk when her babe was three months old. Treated as above the secretion soon returned and remained. The child grew in body and mind so as, at the age of thirteen months, she nearly caught up in size and weight with her sister, two and one-half years older, and excelled her in intellect and ethics.

Asthma.—In a case of twenty-six years' standing, complicated with albuminuria, renal casts, fatty epithelia and uterine lesions, a patient was treated medically and beef was the main diet. The asthmatic acicular crystals in the sputum first pointed out and depicted on plates by an American forty years ago were typical. Soon after the beginning of her treatment there were no asthmatic paroxysms. She lived for several years afterwards, and from imprudent exposure (as she thought herself so well and strong) died from some obscure cerebral trouble unverified by autopsy. Other cases could be added.

Rheumatism.—To repeat, the writer thinks that its main feature is gravel in the blood or deposited crystalline, massive and granular salts. When plenty of water is given to dissolve said salts, beef helps nature to remove said gravel by conferring maximum of force with a minimum of material. Conventionally uric acid gravel is the great salt at fault. The writer cannot recall ten cases where uric acid has been met with in the blood, while oxalate of lime, triple phosphate, cystin, stelline and stellurin, etc., are common. All these have been removed by animal and mineral food, though beef is considered conventionally to put uric acid in the urine. The writer's experience for many years has not sustained this view. But uric acid can always, as a rule, be found when not manifest, by acidulating with chloro-hydric or nitric acid, (as Prof. T. P. Cooke, of Harvard, taught in his first medical laboratory in America, President Eliot, his assistant, in urine.)

Rightly did the United States people shower honors on Dr. Lorenz for his work in dry surgery. But the presumption is that had his cases of congenital dislocation of the thigh been blest with a motherhood fed on two-thirds animal to one-third vegetable food by bulk there would not have been any such cases to treat.

Would that other mothers understood this.

Correspondence.

Reorganization of Medical Society of Virginia Needed.

Mr. Editor.—Though it may seem presumption on the part of one so young in the State Medical Society to offer any suggestions on the mode of conducting its affairs, I cannot refrain from endorsing what my friend, Dr. Grandy, has said in his article in the *Virginia Medical Semi-Monthly* of June 12th, in reference to the reorganization of the State Society. I have attended each meeting since I was elected to membership, and have watched carefully the workings of the Society and the effect on the various members throughout the State. In discussing the subject I find that there are a great many who manifest a lack of personal interest because of a majority from certain localities, and they seem to feel that those localities are the only ones who can derive any benefits from the organization. Some whom I have solicited to join give practically the same reason for remaining outside.

Conditions have changed greatly in the last few years, and it has become necessary for us to stand together in order to protect ourselves as well as to uphold the standard of the profession and to keep it on that high plane it so rightly deserves.

In order to do this we should have every reputable physician in the State a member of the Society stand together in unison, and go at things in a businesslike manner, giving the material interests of the profession at large that consideration which they, too, deserve.

It is a well-known fact that it is quite difficult to get local troubles adjusted before our State Society, troubles which are, I regret to say, often of a serious and grave nature. They have no other tribunal at which to present their complaints, and it is the duty of the Society to see that the offender gets the proper punishment.

As Dr. Grandy has said, not that any change is needed in that part given to the discussion of scientific subjects, for they are necessary and certainly very helpful; nothing so broadens a man as to hear the opinions of others along the lines in which he is interested, because we are all creatures of habit and apt to fall into channels; but that other matters may receive the proper attention, has it become necessary to adopt other and better methods, and none, I be-

lieve, would be so effective as that of the House of Delegates.

I know of no one more capable of bringing this matter before the State Society than Dr. Grandy, and I trust you will insist on his doing so at the next meeting in our city in September.

Very respectfully,

J. RANDOLPH GARRETT, M. D.

Roanoke, Va., June, 1903.

Book Notices.

Diseases of the Heart and Arterial System. Designed to be a practical presentation of the subject for the use of students and practitioners of medicine. By ROBERT H. BABCOCK, A. M., M. D., Professor of Clinical Medicine and Diseases of Chest, College of Physicians and Surgeons (Medical Department of Illinois State University), Chicago. *With three colored plates and one hundred and thirty-nine illustrations.* New York and London: D. Appleton & Co. 1903. Large 8vo. Pp. xxi-853. Cloth. Price, \$6.

This book is one of the most complete and well written that has come to our attention. Theories and speculations have been omitted or given but scanty consideration. The anatomy and physiology of the circulatory organs have received only such notice as was thought necessary to a better understanding of the matter in hand. Physical signs, although properly a part of symptomatology, have been considered separately in order to facilitate the knowledge of that most difficult subject the diagnosis of cardiac disease. Special attention has been paid to treatment, and this part of the subject will be found far more detailed than is the case in most books dealing with these diseases. Etiology, prognosis, etc., have likewise received full attention. The various sections of the work deal with general considerations pertaining to the anatomy; physiology and examination of the heart; diseases of the pericardium; diseases of the endocardium; diseases of the myocardium; cardiac neuroses—*i. e.*, *functional disorders of the heart*; diseases of the arterial system, and an appendix which considers the mechanical devices as aids to determining cardiac diseases; the X-ray; the sphygmograph and Görtner's tonometer, followed

by an index of fifteen pages. The book is simple, clear and concise in the statements made, and, although the author makes no claim to originality, having numerous references to authors, from whose works valuable suggestions and information have been derived, he has constantly kept before him the needs of the student and practitioner as suggested to him during the past twenty years while actively engaged in the practice and teaching of this special line of work.

The Internal Secretions and the Principles of Medicine.

By CHARLES E. DeM. SAJOUS, M. D., Fellow of the College of Physicians of Philadelphia, etc. *Volume First. With 42 Illustrations.* Philadelphia: F. A. Davis Co., Publishers. 1903. Cloth. 8vo. Pp. 800.

The author will be recognized as the able editor of the "Annual of the Universal Medical Sciences," succeeded by the "Analytical Encyclopedia of Practical Medicine." In such editorial work he became impressed with the many isolated contributions which eventually determined him to collate the necessary elements of facts for a more solid foundation than medicine now has. "Tissue respiration being obviously the dominant factor of all the problems" connected with the nature of vital processes, the author determined by experiments, etc., that the physiological functions of the adrenals were sufficiently similar in all vertebrates to warrant the basing the results of his investigations upon solid premises. Indeed, the adrenals may be considered "the key, not only to tissue respiration, but also to the functions of all other organs now classed as 'ductless glands.'" And even these developments assumed secondary positions when it became evident that the better known organs, such as the heart, lungs, liver, etc., were, so to say, subsidiary structures, the instruments in a measure, of the smaller 'ductless glands,' and destined to fulfill the mandates of the latter." Further investigations developed the fact that the red corpuscles were secondary factors in the important function of oxygen-bearers, but the oxygen-laden adrenal secretion dissolved in the blood plasma itself carried on all the oxidation processes of the organism. Such fact, when proven, of course, revolutionizes many of the doctrines of physiology, and some of the time-honored theories of disease and the practice of medicine. The discovery of the fact alluded to also "led

to the discovery that various structures, the functions of which were unknown, were in reality blood channels, or rather, plasma channels. The limit allotted book notice space does not permit us to trace further the revolutionizing ideas of medicine presented by this book. We can only summarize the trend of the new doctrines by citing the titles of the several chapters. After reviewing the physiology of the adrenals from the standpoint of clinical pathology, the internal secretion of the adrenals in its relations to the respiratory processes, and the composition of the blood, and to the general oxidation processes, is considered. Then the internal secretions of the thyroid and thymus glands in their relations to the adrenals are discussed. The anterior pituitary body, the thyroid gland and the adrenals are next considered as parts of an autonomous system. Chapters follow on the adrenal system and vaso-motor; the adrenal system, the general motor system and the pneumogastric nerve; the internal secretions of the pancreas and spleen. The adrenal and vagal systems in their relations to cardiac and pulmonary functions; the posterior pituitary as the functional centre of the nervous system, and as the anterior pituitary's co-center in sustaining the vital process; the internal secretions in their relations to immunity, etc. This volume concludes with a chapter on the internal secretions and the preservation of life. A double-column 12-page *index* concludes the volume. Special pharmacodynamics and physiological pathology—both subdivisions of applied therapeutics—will be considered in the second volume, which is soon to appear. This second volume will also contain an analytical index. This is a new book, and is worthy of attentive reading by every practitioner of medicine.

Refraction and Motility of the Eye. By WILLIAM NORWOOD SUTER, M. D., Assistant Surgeon, Episcopal Eye, Ear and Throat Hospital, Washington, D. C. *Illustrated with 101 Engravings in the Text, and 4 Plates in Colors and Monochrome.* Lea Bros. & Co., Philadelphia and New York. 1903. Cloth. Small 8vo. Pp. 390.

Notwithstanding the modest claims of the author, this book contains *multum in parvo*. The simplicity of the descriptions and explanations makes the text plain to the non-expert in eye work, and yet a just appreciation of its merits presupposes the reader to be familiar with suffi-

cient algebraic knowledge to properly understand the working formulæ for applying glasses, etc., to correct errors of refraction, etc. We could scarcely speak too commendably of the author's intelligible manner in dealing with the technical part of eye work in examination of the eyes and in adapting glasses to the needs of the individual. The book is divided into four parts. Part I is taken up with the theory of light, in which the several chapters deal with the nature of light, reflection and refraction, prisms, spherical refraction, lenses, compound optical systems, the use of lenses in ametropia, asymmetrical refraction, and optical principles of ophthalmoscopy, skiascopy, and keratometry. *Part II* deals with refraction and motility of the normal eye. *Errors of refraction* occupy *Part III*, in which are discussed the methods of determining the refraction of an eye; hyperopia, myopia, astigmatism, anisometropia, and presbyopia and anomalies of accommodation. *Part IV* is taken up with disorders of motility, including non-paralytic disorders of muscular equilibrium and paralytic disorders of motility. The quite complete *index* assists the reader to refer to the special disorders or conditions that are involved in troubles of refraction.

The Surgical Diseases of the Genito-Urinary Organs.

By E. L. KEYES, A. M., M. D., LL. D., Consulting Surgeon to the Bellevue, and the Skin and Cancer Hospitals, Formerly Professor of Genito-Urinary Surgery, Syphilology and Dermatology at the Bellevue Hospital Medical College, etc., and E. L. KEYES, JR., A. B., M. D., Ph. D., Lecturer on Genito-Urinary Surgery, N. Y. Polyclinic Medical School and Hospital; Surgeon to Out-Patient Department, St. Vincent's Hospital, etc. A revision of Van Buren and Keyes' Text Book. *With 174 Illustrations in the text and 10 plates, 8 of which are colored.* New York and London: D. Appleton & Co. 1903. 8vo. Pp. xvi-827. Cloth. Price, \$5.

This is a revision of Van Buren and Keyes' *Text-Book of Genito-Urinary Diseases, with Syphilis*, published for the first time, thirty-odd years ago. Thus it has the unique distinction of being the first publication in any language to group these maladies. "In 1888, after the death of the senior author, Dr. Wm. H. Van Buren, a total revision was made with slight change of title, and the tendency was to make it less venereal and more genito-urinary. A second revision, more thorough even than the first, is now called for by the exaction of circumstances and the accumulation of experience

general and personal. Syphilis has been entirely eliminated, since it is a genital disease only in its method of approach, not at all in its manner of expression." In this volume the surgical picture of urinary disorders has been given the most prominent position, while sexual and genital maladies have been consigned to second place. In the consideration of gonorrhoea, however, the subject has been greatly amplified—even beyond the usual limitations of treatises on the genito-urinary system—including the eye, the joints, etc. In speaking of diet in the treatment of clap, a rather strict dietary is advised for acute cases, but there comes a time, after malady grows chronic, when the diet must be made generous, when coffee is rather helpful than otherwise, and a small quantity of wine or whiskey positively beneficial, with plenty of meat and good cheer." Keyes' book on Genito-Urinary Diseases is so well and favorably known to the profession that we think it sufficient to add that an up-to-date 1903 edition is now on the market.

Practical Medical Series of Year Books.—Comprising 10 Volumes on the year's progress in medicine and surgery. Issued monthly under the General Editorial charge of GUSTAVUS P. HEAD, M. D., Prof. Laryngology and Rhinology, Chicago Post-Graduate Medical School. Vol. IV. *Gynecology*, edited by EMILIUS C. DUDLEY, A. M., M. D., Prof. Gynecology, Northwestern University Medical School, Chicago, and WM. HEALY, A. B., M. D., Instructor in Gynecology. Northwestern University Medical School. March, 1903. Chicago: The Year Book, Publishers, 40 Dearborn street. 12mo. Pp. 242. Cloth. Price, Vol. IV, \$1.25; of whole series, \$7.50.

This volume represents a summary of the best literature of gynecology for the year ending February 1, 1903. It is intended chiefly for the convenience of the general practitioner, giving him in conjunction with his *standard text-book* as working basis the latest methods of procedure in the treatment of diseases of women. For purposes of illustration, there are six drawings and nine plates. These books, as a series, are well worthy of an annual subscription, and will make a valuable addition to any doctor's library.

The Buckeye Doctor. By WM. W. PENNELL, M. D. The Grafton Press, New York. 12mo. Pp. 343. Cloth. \$1.50.

Dr. Lance Thompson is a progressive, well

educated doctor, who settles in a community where for years "ole Doc Paull" is "the on'y doctor that kin give pills an' powders to Hazleton an' fer miles around, 'cepting ole Doc. Dobber, who plays secon' fiddle to Paull." Gradually he rises above the prejudices of his opponents and gradually becomes "the Buckeye Doctor." He does this simply by dint of perseverance, studious habits, prompt and thorough attention to those who call upon him. Soon he wins the heart and help of a fair maiden, who becomes his helpmeet through all the troubles of a young doctor, and finally grows in the confidence, respect and affection of his community. His growing successes do not induce him to retaliate by unkind remark or sneer or gesture upon those who ridiculed his coming to town and settling there. The story is well told—often in humorous strains, at times in pathetic sentences—and is "a tale for physicians and for physicians' patients." In the story are a number of very clever character sketches, characteristic of just such a place as Hazleton. It is a book that is interesting from beginning to end, and has its good lesson for the young doctor going into a new community where he expects to cast his lot.

Editorial.

Eleventh International Congress of Hygiene and Demography.

The following Committee of Organization for the United States for the Eleventh International Congress of Hygiene and Demography, to be held in Brussels, September 2-8, 1903, has been appointed, at the request of the Belgian government, by the State Department: Dr. E. A. de Schweinitz, Columbian University, Washington, D. C.; Dr. A. B. Richardson, Columbian University, Washington, D. C.; Dr. John Marshall, University of Pennsylvania, Philadelphia, Pa.; Dr. Harrington, Prof. of Hygiene, Harvard University, Boston, Mass.

The committee desires to secure the co-operation of all of those in this country who are engaged in hygienic work, both in attendance at the meeting in Brussels, and in sending papers to the Congress. The Congress will be divided into two sections—first, Hygiene; second, Dem-

ography. The subjects which will be considered are the relation of bacteria and parasites to hygiene, the hygiene of foods, the treatment and prevention of communicable diseases, etc. The important subject, in its various phases, of the communicability of tuberculosis will be discussed by prominent men.

The fee for membership is 25 francs, which may be sent to the Secretary-General, M. le Dr. Felix Pulzeys, Rue Forgeur la Liege, Belgium. Those proposing to attend or send papers will please notify E. A. de Schweinitz, Washington, D. C.

The University College of Medicine, Richmond, Va.,

Has elected Dr. J. W. Henson Professor of Anatomy and Genito-Urinary Surgery, and Dr. Joseph Bryan, Jr., Lecturer on Genito-Urinary Surgery and Clinical Assistant. Dr. Thomas W. Murrell has been elected Lecturer on Dermatology. These changes were to fill the vacancy occasioned by the death of Dr. Lewis Wheat during the past session. We congratulate the University College on the selection of such able men to fill the vacancy. Dr. Henson has been Professor of Anatomy for years. Dr. Bryan, since his graduation some years ago, has spent most of his time in European centres perfecting himself in his adopted specialty. Dr. Murrell was Dr. Wheat's assistant in dermatology. In addition, the chair of Histology has been awarded a special lecturer, Dr. Lowndes Pepple, who has been assistant to the chair for years, having been elected lecturer on Histology.

Graduates in Medicine, University of Virginia.

During the commencement exercises, June, 1903, the following were graduated Doctors of Medicine at the University of Virginia: John S. Allen, Lowmoor; Emory West Bitzer, Leesburg; Oliver Curry Brunk, Harrisonburg; Wade H. Frost, Marshall; Geo. P. Hamner, Faber's Mills; Waller Jameson, Roanoke; Jos. Arthur Jeffries, Warrenton; Burney Lankford, Norfolk; John Janney Lloyd, Lynchburg; Will Cline Moorman, Cloverdale; Brodie Crump Nalle, Raccoon Ford; John Aldine Norford, Priddy's; John Atkinson Owen, Turbeville; Francis Thomas Ridley, Portsmouth; Edward Victor Vabz, Staunton, and John W. Winston, Bowling Green—all of Virginia; Peters Force,

Selma, and Frank Edmondson Nabars, Birmingham, both of Alabama; John Allen Gentry, Chattanooga, Garland Somers Wiley, Greenville, both of Tennessee; Charles Henry Peete, Warrenton, William Preston Simpson, Wilson, both of North Carolina; Daniel Warwick Harmon, Atlanta, Ga.; E. Roland Mulford, Bridgeton, N. J.; and Karl Osterhaus, Annapolis, Md.

New Requirements for Medical Licenses.

After July 4, 1903, the following changes in the requirements for a New Jersey license will go into effect:

1. Examinations will be held on the third Tuesday and Wednesday in June and October.

2. The academic requirements will be a certificate or diploma, issued after four years of study, either in a normal, manual training or high school of the first grade, in New Jersey, or in a legally constituted academy, seminary or institute of equal grade, or a student's certificate of examination for admission to the freshman class of a reputable literary college or an academic education considered and accepted by the State Superintendent of Public Instruction as fully equivalent.

3. The medical requirements will be four full school years of medical study, of at least nine months each, including four satisfactory courses of lectures of at least seven months each, in four different calendar years, in a legally incorporated medical college or colleges, prior to receiving the degree of Doctor of Medicine.

Candidates for examination or for the endorsement of a license issued by a recognized Examining Board of another State, will be obliged, after July 4, 1903, to comply with the new standard of requirements for a New Jersey license. Dr. E. L. B. Godfrey, of Camden, N. J., is secretary of the State Board of Medical Examiners of New Jersey.

The West Virginia Medical Society.

Hold their twenty-sixth annual convention at Charleston, W. Va., May 26, 27 and 28, 1903. The meeting was unusually well attended, and many papers of interest were read. Dr. H. B. Stout, of Parkersburg, as president, delivered the annual address. A banquet was tendered the visiting doctors on the second night by the Kanawha County Association. Fairmont was

selected as the place for holding the next annual convention. The following officers were elected: *President*, Dr. T. L. Barbour, Charleston; *Vice-President*, Dr. William Hood, Clarksburg; Dr. E. T. W. Hall, Freemansburg; Dr. R. Camden, Parkersburg; Dr. H. Golden, of Elkins, was re-elected *Secretary*, and Dr. V. T. Churchman, of Charleston, *Treasurer*.

The Medical Society of Virginia

Will hold its thirty-fourth annual session at Roanoke, Va., beginning September 15, 1903. The preliminary postal will be issued July 15th requesting parties who propose preparing papers for the occasion to let the Secretary (Dr. Landon B. Edwards, Richmond, Va.) have the titles by August 1st, so that they may be arranged in the programme, to be issued in circular form two weeks later. Fraternal delegates from other State Societies, etc., will confer a favor by at once notifying the Secretary of their proposed attendance. Fellows wishing distinguished doctors of other States invited to attend the session or to contribute papers, etc., should likewise notify the Secretary. The President, Dr. J. N. Upshur, Richmond, has issued a circular letter to doctors of the State who are not Fellows, calling on the worthy to join the Society. This letter has been distributed as widely as possible in the State to those for whom it was intended. The meeting will be a most important one, as the matter of reorganization of the Society upon the general plan suggested by the American Medical Association will have to be decided. We are assured that the Roanoke profession will have everything in readiness for the session, which will, no doubt, be unusually largely attended.

Dr. Paul B. Barringer.

Has resigned his position as Chairman of the Faculty of the University of Virginia, which honor he has held for years, and has discharged the duties incumbent upon him with untiring fidelity and with commendable success. Dr. James Morris Page, of the Academic Faculty, has been chosen as Dr. Barringer's successor.

Dr. J. R. Gildersleeve, Tazewell, Va.,

Was elected president of the Association of Medical Officers of the Army and Navy of the

Confederacy during its recent session at New Orleans. We know of no one upon whom the honor could have been more meritoriously placed. As a recent president of the Medical Society of Virginia, he exercised remarkable energy and ability in building up that Society, and the distinction his present honor gives him will be an opportunity for the Association of the Medical Officers of the Army and Navy to recognize his active and widespread influences. Dr. Deening J. Roberts, of Nashville, Tenn., is re-elected secretary, etc.

Dr. M. M. Walker

Is spending his summer vacation in Virginia—his temporary post-office being Montross, Westmoreland county, Va. He was one of the founders of the Medical Society of Virginia; for several years was its Corresponding Secretary, and was active in the legislation which established the Medical Examining Board of Virginia in 1883. Though he has served as surgeon in both the regular army and as surgeon of volunteers in the Philippines, and has been absent from Virginia about twenty-three years, he has never lost interest in the Medical Society of Virginia. He expects to attend the session at Roanoke during September.

Board of Examiners for Professional Nurses.

Governor Montague has appointed the following board, as provided for by a recent act of the Virginia Legislature, to examine graduate nurses: Mrs. W. A. Glasgow, Roanoke, one year; Miss Leah DeLancey, Norfolk, two years; Miss M. L. Watkins, Richmond, three years; Miss M. J. Minor, Richmond, four years, and Miss S. H. Cabanniss, Richmond, five years.

The Tazewell County (Va.) Medical Society.

Held their annual banquet at Ratliff Hotel, Tazewell, Va., on Tuesday evening, June 16, 1903. Dr. J. R. Gildersleeve is president, and Dr. Charles T. St. Clair, secretary, of this progressive society.

Wanted, A Good Physician

To assist as a partner in a large country practice. Address A., care *Virginia Medical Semi-Monthly*, Richmond, Va.

THE Virginia Medical Semi-Monthly.

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Original Communications.

INFECTION OF THE PAROTID GLAND.*

By W. A. BRYAN, A. M., M. D., Nashville, Tenn.,
Adjunct Professor of Surgery, Vanderbilt University.

The parotid gland is so situated that when the mouth is opened its space is increased at the top and narrowed at the bottom; when the mouth is closed, or the lower jaw protruded, or the head extended, the space is increased at the bottom most of all, but slightly even at the top of the region.

Surrounding the gland is an extension of the deep cervical fascia—that lying externally being known as the parotid fascia. This limiting wall of fascia is conical in shape, apex downward, and attaches externally to the zygomatic arch and internally to the base of the skull. The stylo-maxillary ligament is a thickened portion of this layer. This fascia, together with the bony surfaces, to which it is attached, completely surrounds the gland, except a narrow space in front of the styloid process and behind the posterior border of the external pterygoid muscle. At this point communication exists between the interior of the parotid sheath and the peripharyngeal cellular tissue, thus making possible extension by continuity of an inflammatory process from either of these spaces into the other, and for an escape of pus accumulated in either with little difficulty into the other. Hence, in retro-pharyngeal infection we find complicating parotitis intervening, or vice versa. The capsule that envelops the parotid gland is of exceedingly dense structure, and tends to hold back the swelling resulting from inflammatory or other conditions and increases the pain attendant upon such pathology.

Traversing the gland are several structures of extreme surgical importance. The carotid artery ascends through it and divides into its

terminal branches before making its exit from the tissue of the gland. This runs from below upwards, but passes through only the upper third of the gland, and obliquely from within outwards.

The facial nerve traverses the gland from behind forwards, dividing into the pes anserinus before its exit. The auriculo-temporal nerve runs through the upper end of the gland. Besides these structures the parotid contains several lymphnodes, sometimes only one, in its substance.

Several important nerves and vessels lie just internal to the gland; there is great irregularity of its extension amongst the structures adjacent, especially internal and anterior to it; the structures tunnelling its substance render the parotid gland, from a surgical standpoint, of vital value. Its removal *in toto*, while a justifiable surgical procedure, is one of the most difficult that engages the operator. It is an easy matter to butcher here; difficult to do clean, scientific surgery.

The parotid gland lies in close relation to the bony wall separating it from the middle ear. It is interesting to note, too, that this bone—the vaginal process—is frequently perforated, and has only soft tissue dividing the gland from the middle meatus, a fact that possibly explains extension of infectious processes from the ear to the gland, as we shall see illustrated further on.

The parotid gland is sometimes directly continuous with the submaxillary gland—one gland, as it were, with two ducts—Wharton's and Stenson's—each in its proper place. Unless this fact is borne in mind, certain processes involving both glands are not so readily understood, and operation, especially for malignancy, may be rendered inadequate, owing to its incompleteness.

The socia parotidis, when present, will likely cause no confusion. It lies just anterior to the

*Read before the Nashville Academy of Medicine.

upper part of the gland, superficial to the ramus of the jaw.

ABSCESS.

Abscess of the parotid gland, while not a frequent condition, results from a variety of causes; its capacity for producing lesions in the gland is not in every case understood.

The first class of causes is the entrance of pyogenic organisms into the gland from other infected regions of the body—viz.: Extension by contiguity, as is seen in the spread of infection from the retro-pharyngeal region and from the middle ear; extension through the lymphatics from infection in the deep temporal and maxillary regions. This involves, first, sometimes only, the intraparotid lymph glands, and the parotid through these becomes infected; extension occurs from remote regions, in cases of pyemia where abscesses are formed, not only in the parotid gland, and there is a general metastasis.

The second class of causes is that of constitutional diseases, which, during or after their period of highest activity, are complicated with parotitis, sometimes suppurative, sometimes not. The diseases belonging to this category are typhoid, typhus and scarlet fever, small-pox, measles, secondary syphilis and puerperal fever. Mercurial and lead poisoning, mumps, chronic nephritis and secondary syphilis are rarely followed by chronic enlargement of the glands and tenderness of these glands, usually on one side only; but suppuration is unusual among them.

The third class of causes includes general peritonitis and intraperitoneal operations, in which no infection seems to have occurred at the site of operation. It is remarkable that in these cases the parotid gland should be selected habitually for the development of an inflammation or an abscess when no other evidence is given in the body of such process, and certainly when no metastatic abscesses manifest themselves to demonstrate that the medium of conveyance is the blood. This fact is no more strange than that orchitis, ovaritis, mammitis or inflammation of the labium majus complicate ordinary mumps. Both of them are thoroughly inscrutable at present.

The rule is, that infection attacks only one parotid gland, but now and then both are attacked. When both glands are involved the cause is of a systemic nature.

The diagnosis of abscess of the parotid gland is made by those symptoms belonging ordi-

narily to abscess, plus the symptoms resulting from parotid enlargement, and the history, both of the development of the growth and the circumstances under which this development has taken place.

The treatment of parotid abscess is, as soon as pus is suspected, to enter the structure cautiously by Hilton's method and then treat as an ordinary abscess. Unless this course is pursued the pus pent up by the dense, tense parotid fascia will, instead of making its escape to the surface, burrow in one or another direction, and in addition to causing more sepsis, create a wider field of culture for the germs contained in it. The course taken by the pus accumulated in the sheath of the gland varies; most frequently it escapes into the middle ear and out at the external meatus. This happens either through the Glaserian fissure or possibly through the opening through the vaginal process of the temporal bone. Escaping either way, the suppurative parotitis becomes at once complicated by infection of the middle ear, and the danger to the patient for life or impairment of his functions at least is doubled. Or, the pus escapes through the slit between the styloid process and the external pterygoid muscle into the peripharyngeal region. Pus likewise escapes by rupture of the sheath into the tissues of the neck and wanders as the natural limits of the surrounding space may determine, or into the temporal region above the zygomatic arch.

Another interesting termination of an inflammation of the parotid gland is gangrene of its whole substance. Gangrenous processes generally are produced fundamentally in one of two ways: First, inability of the tissue involved to receive proper nourishment. For example, the cutting off of its blood supply or such impoverishment of the blood that it is unable to fulfill the demands of the tissues; or, second, inability of the tissue to use the supply of nourishment brought by the blood; in other words, destruction of the cells proper by some agent acting chemically or mechanically on them. Third, a combination of the two. Gangrene of the parotid gland, as all gangrene resulting from well developed inflammatory processes, is produced by a combination of these two fundamental causes. The action of the toxins and the mechanical pressure of the inflammatory process militate directly against physiological activity of the cells; while the pressure on the blood vessels from swelling with-

out, and the accumulation of blood cells from the stagnation within cut short or completely destroy the motion of the blood, so that, however much the cells might be able to use, they are unable to get nutriment in any sufficient quantity.

The diagnosis of gangrene of a parotid gland before involvement of the overlying skin has taken place is a most difficult procedure, the confusing disease being sarcoma of the gland, especially when the gangrene develops slowly.

June 11, 1902, I was called hurriedly to a physician's office here to see Daisy B., white, age 4 years, who was having a severe hemorrhage from her left external auditory meatus. On my arrival I found the hemorrhage under control by the physician in charge, but the child was almost exsanguinated; her pulse was 160 and her countenance the palest. She had an enlargement of her left parotid gland that looked like mumps, there was considerable edema not only over the swollen parotid, but for some distance around it, and the skin around it was pale and waxy. The gland was very hard, but the child was so much crippled by the hemorrhage I could not elicit much evidence of pain or tenderness at that time. In the external auditory meatus, growing from the anterior lower portion, was a ridge of red granulation tissue that so completely occluded the meatus it was impossible to see beyond it. The hemorrhage had come from some point internal to this elevation.

The following is the history of the case as well as I could get it: The child had always been robust and healthy; she had a history of earache on the left side for two years or more, off and on, the pain of which the parents were in the habit of relieving with laudanum or tobacco smoke. During some attacks of cold the mother had noticed "kernels" in her neck. About five weeks before I saw the child she had a swelling appear in the left parotid gland that was diagnosed mumps by a physician who had seen the case. I did not see this physician, but learned from the family that the only symptoms were pain—so intense that the child could not sleep without an anodyne—and the swelling. She developed later paralysis of the left facial nerve. Hemorrhage took place from the ear and so frightened the father and mother that she was taken to four or five physicians in a very short period of time. No diagnosis was given by these gentlemen. The ear was packed

with gauze by some of them to control the bleeding, but it did not do so. I thought I had a rapidly-growing sarcoma of the parotid gland, although most of them occur in people of middle age. Senn says he never saw a case in a patient under 25. I advised ligation of the external carotid artery, and told the parents that in all probability the life would simply be prolonged, but that the child would almost certainly succumb to the disease later on. The child was taken to an infirmary, prepared for operation and anesthetized with ether by Dr. Welburn. Before operating I aspirated the swelling and got only bloody serum. The opening made by the aspirator bled very freely during the operation. On attempting to reach the external carotid I found the swelling extended so far down under the sterno-mastoid muscle that it would be dangerous to risk the loss of time and blood necessary to go underneath it after the external carotid artery. Time of operation, twenty minutes. The patient left the table with a pulse 160, or higher.

On the second day the dressings were badly soiled. The outer bandage was removed and it was discovered that the discharge was from the meatus, the dressing over the incision not being soiled. In front of the tragus was a necrosed area of skin the size of a dime. Separation of the living tissue from the dead took place, so that on the fourth day by pulling on the pinna it was possible to lift the ear and its attachments from the skull. Underneath the skin there appeared over the surface a small amount of thin, whitish-looking pus.

Then I questioned my diagnosis for the first time. On the seventh day all sutures were removed; healing by first intention had been obtained. On the eighth day the parotid gland, completely necrosed and separated, was removed *in toto* through the opening in the skin, and the cartilaginous portion of the external auditory meatus came with it. The drum was destroyed, the ossicles of the ear came away, and the under surface of petrous portion of temporal bone was devoid of periosteum. Cavity was packed with gauze and healed kindly; but the opening of the meatus did not succeed so well in closing. It remained open until September 10th, when a sequestrum came away from the petrous portion of the temporal bone—viz.: The vaginal process, one inch by one-half by one-quarter of an inch. Morris's treatment was then used at once. On September 18th another small piece of bone

came away, and the opening closed completely, since which time she has been entirely well. But my diagnosis is changed. I think she had an infection of her parotid gland, due to the extension probably through an opening in the vaginal process or through the Gasserian fissure.

The facial paralysis, while not excessive, is still marked, and will remain so.

ROUND-CELLED SARCOMA OF THE PROSTATE—REMOVAL—RECOVERY—DEATH NEARLY FOUR YEARS AFTER FROM CANCER OF THE LIVER.*

By GRANVILLE MacGOWAN, M. D., Los Angeles, Cal.

October 2, 1898, S. C. K., farmer, Etiwanda, Cal., was brought to me by Dr. Lilly. For about four years he had been constipated and suffered severely from hemorrhoids. This constipation gradually increased until about three months ago, when the obstruction became so great that he could not empty the bowel at all without an enema. There was no great obstruction to urination until about six weeks ago, when he noticed that he was compelled to use the muscles of the abdomen in order to urinate, and then the act was performed very imperfectly, the stream becoming slower and smaller, until it merely dribbled. Within the past few days there has been total retention, requiring the use of the catheter. The abdomen is tender and sore.

Two days ago he had a very profuse hemorrhage from the bowel, and as he was very fearful, an anesthetic was required for the examination, which was made by his attending physician. A large tumor was discovered on the anterior wall of the rectum completely obstructing the lumen of the gut. He was then brought to me for operation.

Present Condition.—Anæmic from great loss of blood; tongue moist; complete urinary retention without uremic symptoms. A No. 22 F soft rubber catheter passes easily to the bladder from which 450 CC. of clear, normal urine was drawn.

October 21st, under chloroform anæsthesia, I examined his bladder, which was healthy. A large tumor of the prostate necessitated greatly

depressing the handle of the sound before it could enter. By rectal examination an enormous tumor of the prostate, the limits of which could not be reached above or on the sides, was felt. The thin walls seemed to fluctuate. A roughened spot was found on the left side of the median line. This was the source of the hemorrhage. While palpating gently my finger suddenly slipped through this spot into a soft, placenta-like mass, which was easily broken up and separated from the tissue surrounding it. The hemorrhage was frightful, the blood welling forth like water from a fountain. I soon found that I had to deal with a sarcoma of the prostate and that it could be easily shelled out; that it involved the whole organ, but apparently did not affect the capsule.

I enlarged the rent in the front wall of the intestine with blunt pointed scissors so as to obtain more room, and then working with three fingers of my right hand within the capsule of the prostate, aided by the counter-pressure of the left hand above, the thighs being well forced down upon the abdomen, shelled out more than two pounds of tissue, which looked and felt like blood-soaked sponge. This came from above, below and around the urethra, which could be easily felt clear in the middle of the hole from which the mass was enucleated, and was *all* of the prostate. Where the tumor had been adherent to the rectum I removed everything which felt like diseased tissue with the scissors. For the better packing of the cavity, I made an incision through the perineum, in front of the rectum, and dissected back this organ until I reached the prostatic cavity.

The hemorrhage was stilled by packing the cavity with forty feet of sterilized gauze in strips 1½ inches wide, the ends of the separate pieces being stitched together so as to form one continuous strip. Two quarts of normal salt solution was given by hypodermoclysis and one quart of intravenous infusion. The hemorrhage was so frightful that I thought the man must die on the table.

A sound was kept in the urethra and held by an assistant during the operation. The urethra was not opened. A catheter was fixed in the bladder for two days after the operation as a measure of precaution, but was removed on the third day, after which he urinated naturally. The blood vessels in the rectal walls, which could be seen but not tied, were clamped, the forceps remaining in place for two days. The

*Read before the American Urological Association at New Orleans, April, 1903.

packing was gradually removed, commencing on the fourth day, the last being taken out on the twelfth day.

There was no fever, the highest temperature being 100.4. The after treatment was supportive; whiskey, strychnia and caffeine as stimulants, with milk and bovine for nutriment. He was excessively weak, but his recovery was rapid. He was out of bed on the fifteenth day, and left the hospital in a month. The cavity from which the prostate had been removed was fully healed.

He had fecal incontinence for about two weeks. The perineal wound not healing properly, some fecal matter escaped from it for six weeks, but not enough to disturb him. He ultimately regained absolute control of the bowel. For several weeks subsequent to the operation he had edema of the left leg.

In September, 1900, he returned with a small sarcomatous growth on the anterior wall of the rectum, involving one edge of the scar. This was confined to the tissues of the rectum and was removed by blunt-pointed scissors. The hemorrhage was stilled by packing steeped in the solution of the suprarenal capsule.

On September 26th he had a chill and high temperature, accompanied by nausea and great tenderness over the gall bladder, which promptly disappeared after a high enema and a full dose of quinine and salt solution by hypodermoclysis. He stated that he had several times had similar attacks. Apparently, this had nothing to do with his rectal troubles. It was accompanied by a considerable degree of jaundice, and it is not at all improbable that this gall bladder disease was the eventual cause of his death, which occurred in June, 1902, three years and nine months after the operation, from what his physician regarded as cancer of the liver.

The fragments of the tumor were not all preserved, but several handfull of them are in my collection of prostates in the museum of the Hendryx Laboratory. It is, pathologically, a very pretty spindle-celled sarcoma developed in prostatic tissue.

This case is sufficient to teach us that the existence of a sarcomatous growth in the prostate is not necessarily fatal. Ever since the very complete and easy removal of the prostate on this occasion I have, with each successive prostatectomy, been tempted to attack the organ by the rectal route. I have only been deterred from this by the alarming hemorrhage which I

believe would take place from the veins and arteries on the anterior surface of the rectum, and not by the fear that the wound would not heal kindly. I believe that where the rectal tissues seem movable to the examining finger over the glandular growths that this method would be a very easy one for enucleating the prostate. There is, however, the possibility of the rupture of the urethra to be always borne in mind, for glandular growths being commonly inflammatory are much more adherent to the walls of the urethra than this sarcoma proved to be.

540 Douglas Block.

PUERPERAL ECLAMPSIA.*

By E. T. W. HALL, M. D., Freemansburg, W. Va.

From April 1, 1885, until May 1, 1903, I have seen 495 cases of obstetrics; and among the many complications there were seven cases of puerperal eclampsia, with two deaths of the mother and four of the fœtus, making a percentage of 1.41-99 of the total number of labors with a maternal mortality of 28 4-7 per cent., and a fœtal mortality of 57 1-7 per cent. of the eclamptic cases. The following report of the cases must necessarily be brief and unsatisfactory—as most of them lived several miles from my office, where their environment was unsanitary and ignorance and superstition reigned supreme. Some of them occurred when we knew little about the etiology of eclampsia, and I am not so sure, even now, but that we are just picking up a few stray sands, while the real cause still remains undiscovered. I consider that Case 7 received the only up-to-date treatment.

REPORT OF CASES.

Case 1.—Was called to see Mrs. R. in September, 1885. Multipara. Third child. Had one convulsion before I saw her. While making a vaginal examination had another. Found the occiput pressing hard on the perineum. Administered chloroform and delivered her of a living child with forceps. No urinary examination made; but she was puffed up under the eyes and her feet and legs were œdematous. Made an uneventful recovery.

*Read at the meeting of the West Virginia Medical Association held at Charleston, W. Va., May 26-28, 1903.

Case 2.—In January, 1886, was called to see Miss C., primipara. Family gave a history of twenty-five convulsions during the preceding twenty-four hours. Claimed they did not know what was the matter with her, and threatened to make me look through a box with a glass door if I even intimated that she had over-stepped the line of virtue and propriety; but on examination I found the child's head born. I immediately delivered a dead child. I can even now hear the cry of rage and anguish in that mountain home. She became conscious in about ten hours and made a nice recovery.

Case 3.—This case was seen in consultation with Dr. Snyder. Mrs. J., aged 20 years, primipara; had been in labor about twenty hours with a history of eleven convulsions. On examination, found a vertex presentation. First stage of labor completed. Under chloroform anæsthesia delivered her of a dead child. She remained in a comatose condition; had two more convulsions and died in about three hours. The hygienic surroundings in this case were worse than those in any of the cases mentioned.

Case 4.—January, 1897, was called to see Mrs. B., aged 22 years; weight about 240 pounds; primipara. Found the cervix dilated about the size of a silver half-dollar. Labor progressed slowly until the completion of the first stage, when she was suddenly seized with a convulsion. I immediately gave her twenty minims of Norwood's tinct. veratrum viride hypodermically and commenced the inhalation of chloroform. In forty minutes she had another seizure, when I put on the forceps and delivered her of a living child. She regained consciousness in about an hour and made an uneventful recovery.

Case 5.—In June of same year I was called to see Mrs. S., aged 18 years; primipara. Elicited a history of several convulsions. Found the occiput pressing on the perineum. Put on the forceps and delivered her of a dead child. The comatose condition continued to be more pronounced, and death closed the scene in about an hour.

Case 6.—In 1898 was called in consultation with Dr. Frank McKinley to see Mrs. McL., aged 23 years; primipara. She had had two convulsions. I administered chloroform and the Doctor delivered her of a living child. Soon after the delivery of the placenta she had quite a profuse post-partum hemorrhage. The post-partum mouth was marked by great weakness, with an abscess of both mammae.

Case 7.—In July, 1902, Dr. W. Gaston called me in consultation to see Mrs. H., aged 22 years; primipara. Supposed to be about five months pregnant. She had had four convulsions and was profoundly comatose. While making an examination she had another seizure. I found the cervix dilated about the size of a copper one-cent piece. We immediately prepared her for operation, and under chloroform anæsthesia by conjoint bi-manual and instrumental dilatation, dilated the cervix large enough to allow the exit of the child, and put on the forceps and delivered the child in about two and one-half hours. The child was, of course, non-viable; but seemingly had been dead for several hours. The mother's mental condition cleared up in about six hours. In this case hot saline solutions were administered freely per rectum with good results.

Symptomatology.—It is usual in describing the symptomatology of eclampsia to speak of the *prodromal period* and *stage of invasion*.

The symptoms occurring during the *prodromal period* are of vast importance, and if noticed or rightfully understood, put the physician on his guard, and he will institute treatment that may prevent the attack. The most constant prodromal symptoms are a well-marked aura, headache, dizziness, amblyopia, amaurosis, epigastric pain, flatulent dyspepsia and various nervous disturbances, such as somnolence, stupor or insomnia, vertigo, vomiting, mental excitement or despondency. The excretion of high-colored urine at long intervals and diminished in quantity. These symptoms may all clear up; but usually the issue is not so happy and the pre-eclamptic period gives way to that of the *stage of invasion*.

The eyes stare, the pupils, at first contracted to a pin-point, dilate widely and become insensible to light. Cyanosis of the face becomes marked and the muscles of the face jerk rapidly; the head turns from side to side; the eyeballs turn up; the mouth draws to one side. This is followed by the *stage of tonic and clonic convulsions*.

The movements, at first confined to the head, rapidly extend to the neck, trunk and extremities; some authors say, rarely to the legs and feet; but in my cases the legs and feet were involved, with the toes drawn towards the planter surfaces. The head is drawn back and fixed, with the back in an opisthotonic curve, the arms are extended and the fingers and thumbs flexed into the palms, the knees drawn up on to the

abdomen. The tongue may be protruded and is likely to be bitten, and then the froth and saliva are mixed with the blood. Loss of sensation and consciousness is complete. The tonic convulsions last from ten to twenty seconds and are followed by clonic spasms.

The clonic spasms begin as the tonic, on the face, and rapidly extend over the body. The rapidly alternate contractions and partial relaxations distort the face horribly. Respiration is irregular and noisy. It may become necessary to hold the woman in bed. This stage lasts one or two minutes and passes into the *stage of coma*.

This stage lasts from a few minutes to an hour or two. Consciousness and sensation slowly return. But should the attacks become frequent the patient lies in a profound stupor, and if not relieved death closes the scene. When such cases are going to recover they fall into a deep, natural sleep; diaphoresis and diuresis occur; they awake, seem surprised and want often to know what is the matter. It is the exception for one attack only to occur. The pulse is rapid and wiry, the temperature is elevated.

Etiology.—The last word has not yet been spoken; but we can say positively that eclampsia does not always depend on albuminuria, or on the kidney changes that produce it, for eclampsia is not always accompanied with albuminuria. Many theories have been advanced, some of which I will not notice. Uræmia, acetons and ammonæmia have each been given as etiological factors, but after recovery an excessive amount of either of these substances has not always been found in the urine. Auto-intoxication by a ferment which is the product of metabolic processes, producing more than the various excretory organs can eliminate, has quite a number of advocates. Perversion of foetal metabolism is the latest theory, but it has not been sufficiently investigated to enable one to form an opinion as to its merits as an etiological element. The probabilities are that the causative elements are protein made up of one or more of the supposed causes mentioned and some undiscovered tox-albumen or ferment. After the eclamptic attacks are started a very small peripheral irritant, such as a distended bladder, constipation or the passage of the child through the parturient canal, is sufficient to bring on an attack.

Diagnosis.—To always jump at the conclusion that a woman has eclampsia because she

has a convulsive seizure during gestation, labor, or soon after, is to run the risk of some time making a serious mistake. The diseases that mostly resemble eclampsia are epilepsy, apoplexy, hysteria and meningitis.

In epilepsy we can elicit the history of former attacks, no urinary symptoms and by the absence of œdema and a sharp cry.

Apoplexy may be distinguished by the age of the patient, as eclampsia generally occurs in young women, while apoplexy occurs in elderly women, and by the loss of motion and one side, and if there are any convulsions they are unilateral.

Hysterical patients do not generally lose consciousness, there is no coma and they pass large quantities of clear, pale urine. There may be a history of previous attacks.

Meningitis is always preceded by a fever, is very rare in pregnancy, the convulsions are local, while they are general in eclampsia. Where it is possible a careful chemical and microscopical examination should be made of the urine of all women at least a month previous to the expected time.

Prognosis.—Authors differ, but the usual percentage of mortality is 30 per cent. of the mothers and 50 per cent. of the fœtuses. The earlier in gestation the greater the mortality. The pregnant woman who is suffering with decided symptoms of toxæmia, albuminuria and has a rapid decrease in the amount of urine voided, is in great risk of eclampsia, and conversely, makes the prognosis more favorable. According to Jewett the prognosis is favorable when

- "1. The attacks are infrequent and mild.
- "2. The child dies.
- "3. The patient is conscious in the intervals.
- "4. There is a small amount of albumin.
- "5. A fall of temperature occurs.
- "6. The attacks occur late in labor or during the puerperium."

Prognosis is unfavorable when opposite conditions prevail. The child of an eclamptic mother often dies during the first day or two, due to diminished vitality. The causes of death in the mother are exhaustion, rupture of the cerebral vessels, paralysis of the heart, asphyxia, serous effusions into the ventricles and its resultant coma. The causes of death of the fœtus are the convulsions of the mother, probably with concomitant convulsions of the fœtus; asphyxia, due to compression of the placenta,

carbon-dioxide and toxic materials in the maternal circulation.

Treatment.—This should be preventive, the management during an attack and curative. When I see a woman in the latter months of pregnancy with œdematous feet and legs, with or without albuminuria, and diminished urinary secretions, I give her every day or two a tablespoonful of magnesia sulph. and direct her to use daily an injection of warm salt solution per rectum, a heaping teaspoonful to the quart of water, and have her take a daily warm bath. Restrict her diet to those articles of food that are not likely to set up fermentation in the stomach or intestines and that are least eliminated by the kidneys. I also direct her to drink at least two quarts of cold water during every twenty-four hours. If these measures do not relieve the œdema and increase the urinary secretions. citrate of caffeine in 5-grain doses three or four times a day, or sparteine sulphate in 1 to 2-grain doses three or four times daily, often has a happy result.

After labor has commenced and the precursory symptoms of eclampsia are pronounced, produce rapid evacuation of the bowels by saline cathartics and hot salt solution injections. If the woman is robust a generous bleeding from the arm will often prevent an attack. During an attack little can be done outside preventing the woman from injuring herself. Some kind of a mouth gag will be necessary to keep her from biting her tongue. In the absence of a regular gag a soft piece of wood or the handle of a tooth-brush wrapped with a small cloth can be improvised. When the attacks are instituted, the treatment is both medicinal and surgical! All authorities agree that the sooner the child dies, or is born, the better it is for the mother.

While I regard the medicinal treatment in some cases of minor importance, yet it should be vigorously instituted. In a stout and full-blooded woman an abstraction of a quart or more blood from the arm is called for. Norwood's tinct. veratum viridi in 20 to 30-drop doses hypodermatically, the remedy repeated every two hours in 5-drop doses, until the pulse is below 60, is a valuable remedy. A woman hardly ever has an attack with a pulse below 60. A hypodermic of one or two doses of nitroglycerine will often arouse the activity of the kidneys. The injection per rectum, or better, submammary, of a pint of hot normal saline

solution has a powerful effect for good. This should be repeated, if necessary. I mention morphine to unreservedly condemn its use in eclampsia, as it locks up the secretions and prolongs the post-eclamptic coma. The inhalation of chloroform will control the convulsions when no other medicinal agent will.

Should these measures fail and the labor will not soon terminate naturally, the labor should be promptly terminated instrumentally. The rectum and bladder of the woman should be empty and she should be well under chloroform and æsthesia. If the cervix is well dilated the forceps should be applied and delivery slowly and cautiously accomplished. But if dilatation of the cervix has scarcely commenced, then it is "a condition, and not a theory, that confronts us," and the obstetrician who hesitates and dilly-dallies here is guilty of conduct scarcely less than criminal. Those of us who are well supplied with cash might have a pair of Bossi's dilators; but most of us are not. Bimanual and instrumental dilation should be practiced until the cervix is completely dilated, and then the forceps applied. In a case of great emergency I should not hesitate to split up the cervix bilaterally, and after the delivery repair it by a few properly-placed stitches. All lacerations of the cervix and perineum should be repaired as soon after the delivery of the placenta as possible.

I presume that it is needless in this late day to mention that an aseptic technique should be honestly practiced. If this short paper shall produce a vigorous discussion of the subject of eclampsia, one of the most important diseases of the parturient woman, the writer will feel abundantly repaid for his time and trouble in preparing it.

A FEW PRACTICAL THERAPEUTIC FACTS.*

By CHAS. A. LABENBERG, M. D., Richmond, Va.

My explanation for reading a paper in which well-known, but plain, facts are stated, and which will have nothing in it but what we all have heard and read over and over, is partly due to the dryness of the subject and varied field which it covers. I do not desire to introduce any new theories or practices in applied thera-

*Read before the Richmond Academy of Medicine and Surgery, June 9, 1903.

peutics, but merely by calling your attention to a few practical therapeutic points, refreshen your memory along this line, and if this is accomplished its object will not have been in vain.

A practitioner of to-day is beset with so many temptations in the way of proprietary drugs, which are being introduced by the manufacturing pharmacists (which are beautiful in color and pleasant to the taste and dispensed in combinations, in some cases better than we can prescribe ourselves), that the every-day, ordinary drugs and their uses are being gradually shelved more and more.

How many of us stop to consider in the use of the common, every-day drug spirits of nitrous ether, that the results obtained depend largely on the method of administration—*i. e.*, as an antipyretic in febrile affections it should be given in doses of 20 to 30 min. every half hour. To produce diuresis the drug should be associated with some other diuretic and given in large doses from one to two drachms every three or four hours. If the drug is desired for its diaphoretic action it should be given in hot water, 20 or 30 min., and the dose repeated every half hour, patient in the mean time being well covered. As a nervous stimulant the dose should be large, never less than one drachm.

In the use of the bicarbonates to reduce the acidity of the urine the drugs should always be administered after meals. This, a point we all know, when our attention is called to it, but we often prescribe the drug for gonorrhœa (where we wish to reduce the acidity of the urine) and the patient is told to take the medicine three times a day, which he may do, and often does, regardless of an empty or full stomach, and if taken after the former will increase, instead of decrease, acidity.

Do we always stop to think that a bitter to be beneficial should be given before meals, and that one bitter should be substituted for another if they are to be continued? If not, the stomach will revolt. Or to think that when the digestion is impaired and the appetite good, it is an indication that the indigestion is intestinal, and, therefore, beyond the influence of bitters? Or that in catarrhal conditions of the stomach (as in chronic gastritis or drunkards' catarrh of the stomach) alcoholic preparations of the bitters should not be given, using instead the aqueous preparations, such as infusion, or that the bitters are of no avail in organic diseases of the stomach when the secretion of gastric juice is diminished? When the bitters are indicated

we can use the aromatic oils, as their action on the digestive organs is the same as the bitters, and in addition increases the activity of the circulation reflexly by stimulating the sensory of the vagus distributed to the mucous membrane of the stomach.

Don't make the grievous mistake of administering iron in acute inflammatory conditions, or in the anæmia of malignant diseases, or in the hemorrhagic diathesis, or to keep up its use when the stomach rebels, or when your patient's rectum plainly indicates by its swollen veins that the drug is contraindicated. It is well to remember that the action of the hypophosphites is the same as phosphorus—only weaker on the osseous and nervous systems and in the treatment of skin diseases—that cod liver oil is a food, pure and simple, not a medicine, and, therefore, discontinue its use when it proves detrimental to the appetite, causing eructations, heartburn, diarrhœa, etc; that the aqueous extract of suprarenal gland (prepared by using ten grains of the dry extract to two drachms of water and filtered) is invaluable as a pure astringent in all inflammations and as a hematic.

It is well to know that arsenic is the drug par excellence in chorea and pernicious anæmia, and especially in the latter disease, as it prevents the destruction of the red blood corpuscles rather than building up the blood by increasing the number and quality of the red corpuscles; and that next to quinine it is the most potent remedy we have for the treatment of malaria. We should guard against using arsenic in acute skin diseases as much as we would advocate its use in chronic diseases of this character.

In using salicylic acids be careful about a weak heart or weak stomach, as the drug is very depressing. If any benefit is to be derived from salicylic acid in acute rheumatism it must be used early in the disease and in heroic doses at comparatively frequent intervals, not less than twenty grains every two, three or four hours for an adult. If too serious gastric and cerebral symptoms manifest themselves the drug must be decreased in amount or discontinued until the unpleasant action subsides. In any other condition where the drug is indicated it is better to give small doses frequently repeated than to give a full dose at once. While on the subject of the treatment of rheumatism, it is well to remember where there is a weak heart salicin is a much better drug than salicylic acid.

In the choice of your antipyretic, use phe-

nacetin, as it is tasteless, seldom excites nausea, diuresis, diaphoresis or diarrhoea, and all in all is about the best drug for reducing fever from any cause. In this connection, I wish to again call your attention to the very important, but often overlooked, point of administering opium to children; that children bear opium badly, as minute doses have been known to prove fatal. As small a dose as one drop of the tincture has been known to cause the death of a 1-month-old child. If we are compelled to use this drug in a child the best preparation is the camphorated tincture, and largely contrasted to its use is the action of belladonnæ, children having often taken enormous doses in comparison to adults.

When the use and therapeutics of that important drug, ergot, is mentioned, it seems as if we allot its field to but one class of diseases, but its uses are manifold and as satisfactory, therapeutically, as nearly any drug in our pharmacopœa. Not only is it a valuable remedy in obstetrical practices and hemorrhages of whatever nature, but of inestimable value in incontinence of urine (in the adult particularly); in cerebral hyperæmia and consequent mania, as well as cerebro-spinal meningitis, myelitis and congestive headaches.

In the use of santonin it is important to inform your patient that his urine will be colored yellow, his eyesight may be interfered with and that he may be troubled with a rash. And so it is important to inform your patient in the administration of methylene blue about the effect upon the color of the urine, or you may be aroused early in the morning hours with a frightened patient, as I have been when administering this drug for gonorrhœa. And so I might go on indefinitely stating facts, which, as I have said before, are well known to all of us, but are so often overlooked in our daily practice; but my allotment of time is short, and I will simply state, without comment, a few important points: Don't forget that colchicum is the ideal vegetable alterative; that squills should not be used in acute diseases of the kidneys; that expectorants of two classes—sedative and stimulating—one to be used in acute diseases and the other for chronic; that apomorphine in small doses—1-40 of grain—is an exceedingly efficient remedy in acute bronchitis and the hacking cough bronchitis—but beware of it in children; that in the treatment of all diseases of the respiratory system aconite is the drug par excellence; that the aqueous prepara-

tion of digitalis is better as a diuretic and the alcoholic preparations are better as heart stimulants; that strychnine is contraindicated in acute inflammatory conditions of the spinal cord and excites reflex irritability.

11 West Grace street.

THE USE AND ABUSE OF THE NITRITES.*

By A. B. GREINER, M. D., Richmond, Va.

Since the advent of the numberless chemical companies which are to-day endeavoring to make a manufacturers' materia medica by introducing various and sundry palatable preparations, and since the medical profession at large has so kindly taken to such efforts toward advancement, the members of the profession are placing still further to the rear of their library shelves their books relating to materia medica. Just so long as our minds are to be burdened with the difficult proprietary names of preparations, their physiological action and therapeutic indications from the standpoint of the manufacturer, and the superiority of each one over every other one of its class, just so long will doctors continue to daily know less about the preparations of the pharmacopœia and their physiological action. Feeling absolutely certain that my conviction is correct, it is nothing more than proper to bring to your attention some ill remembered, or it may be forgotten, facts concerning that class of preparations known as the nitrites, a class so potent for good when advisedly and cautiously, yet boldly, used, and when not so used capable of extensive damage, or, it may be, destruction. To the quasi arid subject of materia medica let our attention be directed and enter an earnest plea for a more penetrating discernment into the capabilities of our most valued tools.

To this corollary I am sure you will yield assent: That the therapeutic indications for drugs should rest entirely on their physiological action, when such is known, and on the condition of the patient. When this axiom can be applied to all drugs, then, and not till then, will we be in a position to handle with a purposeful hand, guided by a superior intelligence. Unfortunately, the physiological effect produced

*Read before the Richmond Academy of Medicine and Surgery, June 9, 1903.

by some agents is not all understood, and still less do we understand how and why certain phenomena are produced; and because of diverse theories concerning these, errors have undoubtedly crept in and the unwise do what the more enlightened would not dare to do.

There seems to be a very widely diffused lack of knowledge about the nitrites, and this has led to their frequent use and no less frequent abuse, and a more certain knowledge of them becomes imperative, as well as desirable. There are instances where medical men have misconstrued remarks about the nitrites and referred them to the nitrates, apparently not knowing of such preparations or momentarily confusing them. In the present condition of our knowledge I contend that the only proper way to classify a drug is to base its classification on its physiological action. For a proper understanding of such a classification we must go into detail concerning the effects produced by a drug, and as far as we are able to judge the way in which these effects are produced.

At the outset, for obvious reasons, which I shall endeavor to explain, the nitrites will be classified as circulatory depressants, for sufficient knowledge of their *modus operandi* seems to be at hand to substantiate such a classification. Just as soon as we recall a few anatomical facts and couple them with the effects noticed after the administration of these agents, we shall be prepared to believe that such a classification is correct; and after accepting this fundamental fact can revoke some of the things which have been said about their applicability. The most prominent effects—in fact, the only effects—noticed after the use of the nitrites are those referable to the circulatory manifestations. The circulatory system is made up of the heart, the arteries and veins, the accelerator heart ganglia, the pneumogastric nerve and the vaso-motor nerves. For certain disorders of this system these agents might be administered with the confidence of securing satisfactory results. Almost immediately after the inhalation or hypodermic use of the nitrites the heart begins to beat more freely and faster; more freely because arterial resistance in front of it has been largely removed by the great dilatation of the vessels, and there is a space into which the heart may continue to pump blood; faster on account of the foregoing and because the pneumogastric nerve has been depressed and inhibition removed.

Now, just here we are liable to be misled. The effects just noticed are not those of stimulation, and, therefore, they cannot be termed circulatory stimulants; resistance to activity of the heart has been removed, and that by depression, while activity itself has not been stimulated, for the nitrites do not stimulate muscular tissue. The concession must be made here that the inherent power of the muscular fibre to contract perhaps has something to do with the rapidity of the heart's beat, provided that such power is not counterbalanced by the known depressant effects on the accelerator heart ganglia and the heart muscle. But such counterbalance is not liable if the dose of the nitrite is not excessive. Remove to a certain degree the air resistance in front of our bodies and unless we run we fall. We, in ourselves, are not stimulated to run, the activity being passive because of air pressure behind and absence of air resistance in front. Take away entirely this resistance and we are prostrated, no matter what or how strenuous our efforts to stand erect. If the use of the nitrites is continued, or if the doses are large, resistance to the heart is entirely removed by the whole quantity of blood being contained in the dilated vessels, thus leaving nothing on which the heart can contract. The analogy to the entire removal of air resistance is plain. The heart is now free to contract as its own inherent impulse may be direct, but the volume of blood is markedly diminished and the heart muscle depressed on account of the action of the nitrite. In the course of time the heart ceases to contract and it is found to be in diastole, with its cavities empty, unless vaso-dilatation has been incomplete, and such a state is hardly probable. In this condition you can very readily comprehend that the vital centers in the medulla will not be properly supplied with oxygenated blood, and hence they fail of their important functions. There is but one inevitable result, and that is dissolution distinctly brought about by depression.

It is distinctly worth while to glance at the condition of the circulation during *anæsthesia*, because the nitrites have been supposed to be useful in combatting the dangerous tendencies of *anæsthetics*. Can it be proven, basing this proof on the physiological action of the nitrites, that they are most emphatically contraindicated when there is need to resuscitate from the danger of too profound *anæsthesia*? Under such

circumstances superficial pulsation is markedly weakened or entirely absent, this fact in itself calling attention to the danger that is imminent, and at the same time there is noticed the great relaxation of the vessels which capacitates them to contain the whole volume of the blood. Depression to the vaso-constrictor nerves, either at their origin in the medulla or at their termination in the vessel wall, has made possible the weak or absent pulse, and on account of the dilated vessels acting as reservoirs, the heart has nothing to force into the vessel and produce a pulsation. This condition of the circulatory system is practically like that produced by the administration of the nitrites, and one that presents the same symptoms, but I am not yet enough of a disciple of Hahneman to administer the nitrites, nor sufficiently imbued with his doctrine "*similia similibus curantur*" to advise others to do so under such circumstances.

One of the first things that we do when combatting the depressant effects of an anæsthetic is to lower the patient's head, and this is done for a distinct purpose, which is antagonistic to the known effects of the nitrites. By so doing we tacitly admit that the vital centers are anæmic on account of the intense vaso-relaxation, which has evidently been the cause of the anæmia and productive of the dangerous symptoms. Much cogent argument has been advanced by some authorities that beginning pulse failure should constitute the danger signal in general anæsthesia. Others have as determinedly contended that respiratory depression should be the note of warning. Both of these contentions are correct, in that these phenomena are produced; but behind both of these is the vaso-dilatation, which makes each one possible—the weakening of the pulse the first to be noticed on account of diminished vascular tension at once affecting it, and later the respiratory depression because of the lack of sufficient oxygen to keep up central activity of this function. The dependent position of the vital centers permit blood to gravitate from the venous reservoirs to the place where it is most urgently needed. In addition to this, think of the immediate result, if it were possible, of grasping in the hand the entire vascular system and compressing it, mechanically forcing blood where it is wanted for stimulation of the vital centers and overcoming danger. But since this is physically impossible, substitute a drug or something else that will take hold of the vaso-motor system and compel it to contract. If vaso-contraction

is necessary—and manifestly it is—do not administer the nitrites in the hope of producing it, for such cannot be expected and will not be produced; they will only increase or render more permanent the one thing that by late competent investigators has been found responsible for the entire train of symptoms—namely, vaso-dilatation.

Every one is acquainted with the special proclivity of some people for fainting. In what does a faint consist, or, more properly, what is the physiology of it? On account of some exciting ætiological factor. It may be auto-genetic, but is usually hetero-genetic. A person assumes a death-like pallor, loses consciousness and immediately begins to fall, no matter what the surroundings. Upon examination there is detected suspension of respiration and feeble heart beat, a dilated venous and arterial system, a chain of symptoms representing a condition exactly analogous to that of profound anæsthesia. There is only one necessary thing to be done to promptly overcome the faint. Restore or improve the circulation to the vital centers in the medulla and resuscitation is complete. Notwithstanding that there is anæmia of the vital centers and that the nitrites, according to their physiological action, increase it, yet they are administered as remedies of value. On such occasion amyl nitrite has been administered and the attendants have wondered why recovery was delayed. I have seen professional nurses do the same thing, and after a tedious resuscitation say that had it not been for the nitrite they doubt if the patient would have recovered, little dreaming of the probable cause of the delay. Medical students frequently say that the nitrites are indicated in just such instances as have been mentioned, and they are slow to believe the contrary. The fact shows that this class of preparations has always heretofore been regarded as stimulant, but the physiological effects do not uphold this view.

The flushing of the face after the administration of the nitrite has led us to believe that the cerebral centers are also freely supplied with blood; but is this not another indication of the relaxation of superficial vessels and that the cerebral anæmia is actually increased?

Nitroglycerin is one of the useful agents in chronic nephritis, because it dilates the renal vessels and takes resistance from in front of the heart by the depressant effect on the vaso-motor system.

To certain disorders of the circulatory sys-

tem do we find the nitrites particularly applicable—in truth, their therapeutic usefulness may be said to be confined to those conditions accompanied by vaso-constriction; and distinctly contraindicated when the symptoms are produced by vaso-dilatation or are dependent upon it.

Angina pectoris is amenable to the nitrites, and the good results are not the outcome of any anodyne properties of the drug, but solely because of the power to produce dilatation of the vessels.

No new physiological phenomena are claimed for the nitrites, but a better understanding of them is desirable on account of the different views regarding their applicability.

THE MINERAL, ANIMAL, VEGETABLE AND SPIRITUAL KINGDOMS OF FOOD.*

Indispensability in health—Causal and cural in disease—Impossibility of life on one kingdom alone.

By EPHRAIM CUTTER, M. D., LL. D., New York, N. Y.

(Continued from page 157, June 26, 1903, number.)

3. *Vegetable Kingdom Food.*—Botanic food would be a better term, as popular usage limits vegetables to potatoes, squashes and such like. Wheat, the king of cereals, is a vegetable, because it is a grass.

No one disputes the indispensability of vegetable kingdom food, hence our words as to this division will be directed to vegetarians who come out squarely and declare that the food of no other kingdom should be eaten because, for example, St. Paul said: "If meat make my brother to offend, I will eat no meat." * * * Now, I have no wish to interfere with those that thus speak for themselves, but I do object to their laying down this law to others because the said quotation was begun, "Now, as to things offered to idols"; because a little further on Paul said: "Whatsoever is sold in the shambles that eat"; because cattle are mentioned from Genesis to Revelation; because before the deluge vegetarianism did not produce all saints, but many sinners, who were drowned in the flood for their wickedness; because Jehovah ate both vegetable

and animal food as Abraham's guests (See Genesis 18); because Jesus Christ must have eaten animal food at the Passover of His time; because Christ after resurrection cooked fish and bread over a fire of coals at the sea of Galilee and invited six apostles with Nathaniel to breakfast (R. V.), Himself being a waiter for them; because God commanded (Deut. 14: 4): "These are the beasts that ye shall eat"; because God said (Deut. 12: 15): "Thou mayest kill and eat flesh in all thy gates"; also Gen. 9: 3: "Every moving thing that liveth shall be made meat for you" * * * also "whatsoever parteth the hoof and is cloven foot and cheweth the cud, that shall ye eat"; because Peter was thrice commanded to eat flesh of all kinds when he had objected thrice; because he (II Peter 2: 12) speaks of "natural brute beasts made to be destroyed"; because Paul speaks of those, "commanding to abstain from meat which God created to be received with thanksgiving"; because the Jews have used animal food from their earliest history; because John the Baptist ate locusts and wild honey (surely this exhibit authorizes animal kingdom food); because animal food alone in active life can be lived on longer than any other food; * because tuberculosis has been produced by feeding healthy animals on fermenting vegetable food, and some have been cured by animal food; because I have never known a case of nephritis or Bright's disease cured by vegetable kingdom food; because others and myself have known albuminuria, renal casts and fatty epithelia to be removed by food from the animal kingdom; † because of cases

*The only exception I have found where vegetable food exceeded beef was reported in the Religious Encyclopedia, published in New Hampshire, 1835. Some sick English army officers were captured in India and imprisoned for several years on a sole diet of rice and water. They were freed in perfect health, and found themselves advanced in rank, as their superior officers had died. If my vegetarian friends have other instances, please give them. Remember, the argument here is that man *should live on all the four kingdoms of food*. It may be said that the prevalence of leprosy in rice eating countries, and its non-prevalence in animal food eating countries, favors animal food. Those who disagree are asked to petition the United States Government to feed healthy men solely on the foods in question each by each and let the results decide.

†Indeed, I might say that I found these evidences in my own urine in 1889. That I have kept for years, and now keep a daily record of my urinalogy and food; that almost invariably vegetable food solely fed me brings back said evidences, one or all, after animal food has eliminated them, so that I am here an interested witness convinced that my life depends on my eating animal food, and that if I followed vegetarians I should die.

*A lecture at the College of Physicians and Surgeons at Boston, April 27, 1903, from the Chair of Clinical Morphology and Applied Medicine.

like these: About eighteen years ago a lady with albuminuria, renal casts and fatty epithelia in the urine, and with oil in the blood and fat in the leucocytes, was treated mainly on good, sound lean beef. All these stigmata are not found now, and she has been called the smartest woman in her town.

A man rejected twenty years ago by a life insurance company was similarly treated, and remains cured. The above company has him now as a risk; because animal food has cured incipient cataract. One case 87 years old. Cataract is a fatty degeneration. A pet dog fed on starches and sugars in one family developed cataracts, plain to unaided vision from the largeness of the pupils. Fed in another family on animal food for some months the dog's crystalline lenses were clear. Dr. S. Wier Mitchell, Dr. B. W. Richardson, of London, and the writer have produced double cataracts in frogs by immersion in syrup. The latter observer found an hour and more was needed, while the distinguished compeers succeeded in less time. Dr. Richardson said in ten minutes. These experiments are easy to repeat by any one. The artificial cataracts can be seen without glasses. How can we do away with animal kingdom food?

4. *Spiritual Kingdom Food*.—A few verses from John 6 show the highest scope of this kingdom. Verse 48: I am that bread of life. 53: Then said Jesus unto them, Verily, verily I say unto you, except ye eat the flesh of the Son of Man and drink His blood, ye have no life in you. 54: Whoso eateth My flesh and drinketh My blood has eternal life; and I will raise him up at the last day. 63: The words that I speak unto you, they are spirit and they are life.

Vegetarians can find here no support for excluding spiritual food. Please read the whole chapter, noting how Jesus fed about 5,000 men, besides women and children, with five barley loaves and a few small fishes! This spiritual kingdom includes in this wide sense the intellectual, perceptive and mental. Among these foods are the Bible, music, literature, science, history, art, poetry, newspapers, etc. It goes without saying that this kingdom cannot be dispensed with in time nor eternity. Great care should be taken that man's spiritual food is good, sound, clean; that man should not eat spiritual chaff, sawdust, poisoned words; that man should not starve himself as to this food kingdom, and should remember that music is a

spiritual food, found in heaven, a universal intellectual pabulum that is eaten beyond the realms of time; that there is bad music food and good; that music is one of the best mental athletics; that music confers force (dynamics, I like better); that good music heals in sickness and disease, cures insomnia, quiets intestinal commotions, and will enable a patient to control for a time fecal evacuations; that music cures colics, crural cramps, congestion of nerve centres during panics and great dangers; that music directly strengthens the heart and vaso-motor nerves, increases the exhalation of CO₂, promotes blood circulation, osmosis nerve force, helps digestion; that music rests the sympathetic nervous system so as to ease the tire of the sensory nerves that have stolen dynamis from the sympathetics; that music opens up more avenues to the soul than phonation; that it is not a mere pastime; that it is not true that musicians are a degraded profession, as the following list shows. From the Bible: God is represented as singing with joy in Zep. 3: 17. Our Saviour sang at the last Passover before they went out to the Mount of Olives.

Moses sang, and he is the only human composer whose music is sung in heaven. King David not only sang, but wrote psalms and music to them, invented and played musical instruments, and yet he was one of the richest kings. According to Josephus, the thousands of talents buried in his tomb were so many that Herod rebuilt the temple partly from this sepulchral treasure. David also was a great genral and warrior. Slew in his youth Goliath with a sling, and also a lion and bear with his bare hands. David's songs are used in Jewish and Gentile churches.

Paul (one of the greatest men of the world) and Silas sang. To come to later days, Luther sang. King Canute also. James G. Blaine had music to comfort him in his last illness. One of the late Czars had trombonists play at nights during his Bright's disease. So hideous was the music to his special physician that he ran away from his royal patient and had to be recalled.

Vegetarians do not dispense with spiritual kingdom food when they publish commands restricting all food to the vegetable kingdom. They must have read their own writings in the newspapers and also the Bible and other books.

To sum up, no one ever knew of vegetarians not breathing, not drinking water, not using salt,

nor eggs, milk, butter, cheese—though placing kine and hens in the vegetable kingdom violates language, science and literature. Nor are they known to refrain from the spiritual kingdom food, hence they have no right to dictate to others rules that they can't keep themselves, and break with every breath they draw. And when vegetarians prohibit the best means of curing diseases of fatty degeneration of the heart, etc., they are doing a positive harm to the profession of medicine.

Equitable Building, 120 Broadway.

ANESTHESIA AND ANESTHETICS.*

By THOMAS DOWLING, M. D., Washington, D. C.

It is not the intention of the writer to present an elaborate essay on this very important subject, but only to give a few facts that he has been able to collect from the vast amount of literature upon this subject in the Surgeon-General's library.

In the *Index Catalogue* for 1898-1900 we find fifteen pages devoted to this subject, each page containing two columns of closely printed references, thus making a total of over thirty columns of references. Under the head of chloroform, there are twenty-four columns of references. Under the head of ether, there are twelve columns. In addition to the above references must be added the ever-increasing number of articles upon this subject that are appearing in the medical journals almost weekly and have not as yet been entered in the *Index Catalogue*.

An anæsthetic may be defined as "an agent to produce anæsthesia or deprivation of sensation." This condition, according to Wood, "is the loss of consciousness produced or accompanied by loss of muscular action."

It is a well-known historical fact that the ancients were well versed in the art of anæsthetizing, and that certain drugs and herbs were used by them to produce sleep. Reference is made in the Bible to the production of sleep, when Adam was made to sleep so profoundly that a rib was removed and he felt no pain. Just how this sleep was produced we do not know.

In the writings of Dioscorides, mention is

made of the "wine of Mandrake plant," to deaden the pain of amputation or the hot iron on the field of battle. In another place he refers to the use of suppositories made of the fat of swine and the wine of the Mandrake plant. This was used "to induce sleep in men that tossed about after amputations."

In the writings of Heroditus we find repeated references to the inhalations of the vapor of the Bhay of Hasheeh plant for the relief of pain; this plant has been identified by some writers as the Mandrake.

Aupheleius says: "That always before all amputations the juice of the Mandrake plant was given to ease pain."

In the writings of Pliny we find this reference to the use of the Mandrake plant: "Sometimes the smell of the wine of the Mandrake plant is sufficient to ease the pain of amputation or the pain caused by the sting of a serpent by causing the man to fall in deep sleep, and when he awakes he knows not what has happened."

According to Lyman, the wine that is mentioned in the Bible to allay the pain of the thieves on the Cross was, without doubt, the same wine that is mentioned in the writings of Galen, Auphelius and Dioscorides. The wine was made from the Mandrake plant.

Paulus Aeginta refers repeatedly to the use of the wine of the Mandrake plant to relieve pain in amputations, and its use after amputations to produce sleep.

The wine of the Mandrake plant was not only used to relieve pain in surgery, but also to relieve pain of labor. Several old writers speak of it being used this way. In the *Medical Gazette* of London, Volume VI, Dr. Silvester suggests that it was the Mandrake plant that Rachel begged Reuben to give her to ease her pain while she was in labor.

In the writings of the Greek physicians we find repeated references to the use of the "Sleeping Apple," to ease pain and produce sleep. This, according to a great many writers, was the Mandrake plant. Galen refers to the "Sleeping Apple" as having the "power to paralyze sensation and motion."

After repeated search the following translation was found of a quotation taken from the writings of Dioscorides, in regard to the making of the "Sleeping Apple" and of its use: "Take the juice of the water hemlock, the leaves of the poppy, the leaves of the hyoscyamus plant, the root of the mandagora plant and small portion

*Read at a meeting of the Medical and Surgical Society of the District of Columbia, February 5, 1903.

of musk. These must be beaten together until it forms a liquid or water. When the liquid is needed for use, in case of amputation or the hot iron, it is placed on a sponge and the sponge is held before the nostrils of the patient for a short time, and in a few minutes it will bind the eyes in a deep sleep, and we can cut off a limb without fear of pain to the patient."

The use of the juice of the water hemlock is also mentioned by some of the ancient writers as having the power to produce sleep and relieve pain. The literature of the Scythians is full of quotations of the use of wine of hemlock and also the vapor of burning hemlock to relieve pain after the use of the hot iron.

Theodorica of Bologna, a famous surgeon, in 1298, made use of the following combination of plants to relieve pain: "Hemlock leaves, lettuce leaves, ivy leaves, belladonna leaves, and the leaves of the wild poppy. The leaves were all beaten together and made into a wine by pressure. When needed, the wine was placed on a sponge, which had been previously saturated with hot water. The sponge was then held to the nose of the patient, and in a short while the patient was in a sound sleep." To arouse the patient the juice of the rue was instilled in the ear.

The Chinese used cannabis indicæ to relieve pain as early as the twelfth century.

In the early part of the twelfth century we find in the writings of Albertus Magnus references to a liquid that he called "Albus Ardens," which he had obtained by distilling red wine, quick lime, green figs and salt in a copper vessel. This preparation was used to relieve pain before he amputated—the patient inhaling it from a sponge.

Modern investigators have tried to make this preparation and have produced an alcohol with a faint trace of ether. It is evident that it was the alcohol and not the ether that produced the narcosis.

In 1544 Dubarts, a surgeon, writes as follows in regard to anæsthetics:

"Even as a surgeon minding off to cut
Some useless limb, before in use he puts
His violent engines on the vicious member,
Bringeth his patient in a senseless slumber,
To save the whole, cuts off the part."

Bullien, a surgeon in the reign of Henry VIII, described a method of making anæsthetics or sleeping waters by the distillation of herbs and drugs. When this water was used, "it has

the power to bring forth sleep so sound that a man could be cut like a piece of marble."

In an old volume, dated 1608, on "Natural Magic," by Jean Portiæ, there is a very full description of a volatile substance which he made from herbs, salt, etc., by distillation. This liquid was kept in a leaden bottle, which was securely closed so that not a drop could escape. When the liquid was required for use the cork was removed and the bottle held to the patient's nose for a few moments. The following is a description of the effects of the liquid upon the patient: "In a very short while the patient was in a profound sleep, and could not be awakened except with a great noise, and when he did awake did not remember what had taken place."

Shakespeare mentions the use of the mandagora plant several times as having been used to produce sleep.

In the seventeenth century, Augustus II, King of Poland, had one of his feet amputated while insensible to pain while under the effects of a drug that his surgeon had ordered him to inhale from a piece of sea sponge which had been previously saturated with some solution. What this solution was we do not know.

Dr. Pearson, of Birmingham, in 1785, reported a case of asthma being cured by the use of ether.

In 1816 Dr. Watson, quoting Dr. Woolcombe, of Plymouth, writes as follows: "Two ounces of ether were placed in a saucer during an attack of asthma, and this was inhaled by the patient. The patient (a lady) soon became insensible, and when she awoke again was entirely free from all pain and the distressing attack of asthma had entirely disappeared."

As early as 1839 Dr. J. Marion Sims, in Anderson, S. C., then a lad, noted the effects of ether upon a negro lad that worked upon his father's farm. This boy after inhaling the ether given to him by Sims, was for a long time unconscious, and Sims thought he had killed him, and it was only after great effort on Sims' part that the negro boy recovered consciousness.

In 1842 Dr. Crawford W. Long, of Georgia, removed a tumor from a man's neck while the man was under the effects of ether. By referring to Dr. Long's journal we find this very interesting entry: "Jas. Venable, ether and excising tumor, \$2.00." This is the earliest authentic record of the use of ether in surgery.

As early as 1844, Dr. Wm. Morton, of Boston, experimented with different drugs and

chemicals with the hope of finding some substance that would relieve pain in his dental work. Having heard of the use of ether by Dr. Long, of Georgia, Morton concluded to make some experiments with ether. On September 30, 1846, while seated in his own operating room, he inhaled ether from a handkerchief, and in a few moments lost all consciousness, but awoke in a few moments in the possession of the greatest discovery that had ever been made by man to relieve suffering humanity. Morton hastened to announce his discovery to the Massachusetts General Hospital, and asked permission to make practical demonstration. On Friday, October 16, 1846, he was allowed the privilege. Sulphuric ether was used. It was administered by (William) Morton, while Dr. J. Collins Warren operated for the removal of a vascular tumor from a man's neck. The tumor was removed without the patient feeling any pain whatever. The patient made a successful recovery.

After this demonstration ether was used repeatedly at this and many other hospitals throughout the country, and, as usual, as with all other important discoveries, many heated discussions took place as to who was entitled to the credit of this great discovery.

Just a few words with regard to nitrous oxide. This gas was discovered by Sir Humphrey Davy in 1800. He describes the effects of the gas upon himself while suffering with a severe toothache as follows: "Of all his uneasiness being swallowed up for a few moments of pleasure."

On December 10, 1844, Dr. Horace Wells, of Hartford, Conn., demonstrated the practical use of this gas by having a large molar removed from his own mouth by a colleague named Riggs while he (Wells) was under the influence of the gas.

A great deal has been written in regard to the discovery of chloroform. It would take up too much time to go into details, and only a few historical facts will be mentioned from the life of Sir James Young Simpson, the discoverer of chloroform.

The properties of chloroform were discovered and described by two chemists simultaneously, but independently, in 1831. The two chemists were Liebig and Souberin.

Mr. Waldie, a Liverpool chemist, having heard of Liebig's discovery, also had made some chloroform, and suggested to Simpson, as early as 1832, the trial of this curious liquid.

In 1835 the chemical composition of chloroform was accurately described by Dumas, a French chemist.

Early in 1847, Flourens, another French chemist, had written a series of articles on the effects of chloroform upon the lower animals. It is believed that Simpson was not aware of these experiments, and it was not until November 4, 1847, that he was able to demonstrate the use of chloroform as an anæsthetic. For a complete history of Simpson's experiments, I would refer to his life by H. Gordon, published in London in 1897.

On November 10, 1847, Simpson read a paper before the Medico-Chirurgical Society of Scotland, describing his discovery and also its use in mid-wifery. (The honor of having first used chloroform in this important branch of medicine also belongs to Simpson.)

On November 15, 1847, Simpson added a postscript to his paper of November 10, 1847, and in this paper he states that he had given chloroform to about fifty individuals without the slightest bad results. He also gives a full description of the first surgical cases in which he used chloroform in operating upon patients of Prof. Miller and Dr. Mier at the Edinburgh Infirmary.

So much for the historical side of anæsthesia and anæsthetics. We will now consider for a few moments the practical side of the subject.

Anæsthetics are divided into two classes—local and general. Under the head of *local anæsthetics* we have the following:

Cold, such as ice or ice and salt.

Ethyl chloride used as a spray.

Rhigolene and ether used as a spray.

Cocaine locally or hypodermically.

Eucaïne locally or hypodermically.

Spinal analgesia or the subcutaneous injection of cocaine into the spinal cord.

And under the head of *general anæsthetics* we have the following:

Ether.

Chloroform.

Nitrous oxide.

Anæsthetic mixtures such as the A. C. E. mixture (one part alcohol, two parts chloroform, three parts ether).

Dr. Schleich, of Berlin, suggests the following mixed anæsthetic and gives the three formulas which he uses:

No. 1. Chloroform $1\frac{1}{2}$ oz.; petroleum ether $\frac{1}{2}$ oz.; sulph. ether 6 oz.

No. 2. Chloroform $1\frac{1}{2}$ oz.; petroleum ether $\frac{1}{2}$ oz.; sulph. ether, 5 oz.

No. 3. Chloroform 1 oz.; petroleum ether $\frac{1}{2}$ oz.; sulph. ether. $2\frac{1}{2}$ oz.

He claims for these solutions the following advantages over all other anæsthetics:

A. Saving of time in the going under and the coming out of its influence.

B. Less excitement, cyanosis and a marked decrease in secretion of mucus results from its use.

C. Also less vomiting and less danger of bronchitis.

The solutions have been tried by a great many operators, and as opinions differ so widely it would be a very difficult task to base an absolute opinion upon the advantages claimed for these solutions.

SAFETY OF THE DIFFERENT ANESTHETICS.

There is no question in the whole range of surgery that has brought forth so much discussion as the safety of the different anæsthetics in daily use.

It is the opinion of a great many writers upon this subject that the safety of the anæsthetic is more dependent upon the anæsthetizer than the anæsthetic that is used. We know that some operators use ether exclusively, while other operators use chloroform in all cases.

The claim that ether is the safer anæsthetic in inexperienced hands seems rational enough, but why should the inexperienced be allowed to give anæsthetics? No one would send for an inexperienced surgeon to perform a difficult operation, or, in fact, any operation that involved a human life. Then why should we have any other than trained assistants in this important duty?

The claim that ether should be used exclusively in all surgical operations I do not think is well founded, as the following facts are in favor of the use of chloroform:

A. It is more agreeable to patients.

B. Quicker in action than ether.

C. Recovery more prompt.

D. Less irritating to the lungs and kidneys.

In former times ether was given in cases in which the heart was in any way diseased. This is not now considered a contra-indication for the use of chloroform, and such patients do not seem to suffer any ill results from its use.

THE ADMINISTRATION OF ANESTHETICS.

As we are all familiar with this part of the subject, we can pass it by with a few words.

The patient should, if possible, be prepared for the operation the night before. No solid food should be given for at least twelve hours before the operation. The bowels should be moved by giving an enema, if necessary. The urine should be carefully examined for albumen. If a large amount is found, the operation should be delayed for a day or so, if possible.

The anæsthetic should be given in a room apart from the operating room. Absolute quiet should prevail in the room. All false teeth should be removed from the patient's mouth. All other substances should also be removed from the patient's mouth.

Always have a third party present. This is a very important precaution from a medico-legal point of view. Watch the patient and not the operator, noting the pulse and respiration, and be prepared to meet the first unusual sign in either. Never "crowd" an anæsthetic, but be deliberate.

Complications during anæsthesia are always likely to occur, and the anæsthetizer should be prepared to meet the emergency promptly. On a table, in easy reach of the anæsthetizer, there should be a mouth gag, tongue forceps, hypodermic syringes in working order filled with solution of nitroglycerine, strychnine, etc.; also pearls of amyl-nitrite and whiskey for stimulation. Hot sterile salt solution should always be ready in case it is needed.

In case the patient should vomit, stop the anæsthetic, wipe out the mouth, turn the patient's head to one side. After the vomiting ceases proceed with the anæsthetic.

Sometimes the patient "forgets to breathe," the anæsthetic should be stopped until the patient recovers a little.

During the administration of chloroform there is a condition that resembles syncope. If this condition should occur the anæsthetic should be stopped *at once*, the mouth held open with a gag, and the tongue drawn forward and artificial respiration begun. In case the patient does not recover under this treatment we should then invert him by having an assistant hold him up by the heels while another assistant makes artificial respiration by compression of the sternum.

Shock is always attended by a deadly pallor, dull pulse, slow respiration and a cold, drenching sweat. This condition sometimes occurs, and must be met in a very energetic manner by hypodermic injections of strychnia and whiskey.

Hot bottles should be placed around the patient, care being used not to burn him. Covering the patient with blankets must also be done at once. Salt solution subcutaneously and also by rectum must be given. In case the shock is due to a great loss of blood, then salt solution must be given intravenously.

After the operation is over the patient should, if possible, be placed in a separate room where it is absolutely quiet. A nurse should be in constant attendance until the patient fully recovers consciousness.

It has been recommended that oxygen be given to patients after anaesthesia on the ground that it lessens the nausea. This is particularly recommend for old or feeble patients, or after prolonged operations. The gas is used in the same way as in the treatment of pneumonia by passing it through water and regulating its flow by a valve.

The patient should be kept in a recumbent position for at least eight hours. Hot waters in teaspoonful doses will relieve the vomiting by keeping the stomach free from mucus. The pulse should be watched carefully and the least sign of collapse should be promptly met with stimulants.

A very interesting point to be considered is the amount of the anaesthetic to be used in an operation. This I do not believe can be accurately estimated as there are several things that must be taken into consideration:

First. The susceptibility of the patient to the anaesthetic.

Second. The manner in which the anaesthetic is administered.

Third. The character of the operation.

Fourth. The skill of the operator.

In an article published in the *Journal of the American Medical Association*, March 24, 1900, the following table was given in regard to the amount of anaesthesia used, all things being considered, for an hour's work during an average operation:

Chloroform, one to three ounces.

Ether, four to six ounces.

A. C. E., eight ounces.

Further studies on this very interesting point are now being made by several investigators, but as yet the report has not been published.

In regard to the mortality from anaesthesia we have the following report, taken from the *Surgical Record of the War of the Secession*, showing the following results:

Mixed anaesthetic, 10 per cent.

Ether, 30 per cent.

Chloroform, 60 per cent.

This high mortality from chloroform can be readily understood when we consider that chloroform was used on the field, while ether was used in the hospitals.

The very latest record in regard to the mortality from anaesthesia is as follows:

Nitrous oxide, one death in 150,000.

Ether, one death in 26,000.

Chloroform, one death in 10,000.

Or, in other wards, taking the three principal anaesthetics as a whole, we have a mortality of one death in every sixty thousand persons anaesthetized.

The employment of subranoid injection of cocaine for spinal analgesia was first demonstrated by Dr. Leonard Corning, of New York, in 1885, who used this method for diseases of the spine, and not surgical cases.

In 1898, Bier, of Berlin, demonstrated that analgesia of the lower extremities can be produced by this method in surgical operations. This discovery was hailed with delight by numerous operators and experimentors. Good and bad results quickly followed, some operators praising the new method while others condemned it. We could spend a whole day discussing the various methods that are used by the different operators, but from the numerous articles that have been written we are all familiar with the subject. For a full and complete discussion of the subject I would refer to the *Philadelphia Medical Journal*, of November 5, 1900, and the *Journal of the American Medical Association* of February 9, 1901.

There is one subject that I wish to mention very briefly, and that is the use of nitrous oxide and ether as an anaesthetic. This combination was first used as an anaesthetic by Clover in 1876, in London, and since that time it has been used a great deal in many of the London hospitals.

As early as 1896 it has been used about thirty-five times by Robert Weir, of New York city, he then abandoned it on account of the cyanosis that it produced.

In 1897 Dr. Thomas L. Bennett came to New York city and advocated this method of anaesthetizing and invented the apparatus that now bears his name (a full description of this apparatus and the method of its use appeared in the *New York Medical Journal* March 10, 1900).

It is not my intention to enter into a long description of the various apparatus that are now in use or the method of their use, but solely to mention the following advantages that are claimed for that of Bennett's—viz:

First. Comfort of the patient, as it acts quicker than ether alone, and the patient has not the sensation of impending suffocation.

Second. Freedom from excess of mucus and saliva, as the glands are not stimulated as by ether.

Third. Less ether is required.

Fourth. Diminished chance of complication on account of the small amount of ether used.

Fifth. Alcoholics can be anæsthetized with less effort than with either chloroform or ether.

Sixth. Can be used for patients of all ages.

Seventh. Safety as compared to all other anæsthetics. So far the literature shows only three deaths from its use.

Before closing, I should like to call the attention of the medical profession to the importance of the subject of anæsthesia, and anæsthetics being taught in our medical schools by means of lectures and practical demonstrations. Every student should be compelled to attend a course on this subject, and should be required to give at least two anæsthetics—one of ether, the other of chloroform—under proper instruction before he is allowed to graduate.

The lectures should embrace the subject in somewhat the following manner:

First. The history of anæsthetics.

Second. Pharmacology of anæsthetics.

Third. The administration of anæsthetics.

Fourth. Complications during anæsthesia.

Fifth. Treatment of complications during anæsthesia.

Sixth. After-treatment of the anæsthetized.

The practical demonstration should be given under a skilled anæsthetist, in a regularly appointed operating room, the student noting the pulse and respiration, and treating such conditions as may arise. Full notes should be kept for future reference.

I do believe that the time is not far distant when we will have in all medical colleges such a course of instruction, and it will be another step in medical and surgical advancement.

HYGIENE IN THE PUBLIC SCHOOLS.*

By J. D. BENNETT, M. D., Crystal River, Fla.

The subject of hygiene in our public schools is second to no other in general importance. Since most of the physicians in Florida are at some time called to act as and for school officers, as members of boards of public instruction, trustees, supervisors, or on building committees, it is necessary that we have the information to give proper advice and instruction.

Most of our schools are taught by young ladies who have little knowledge of hygiene; but they usually possess a stock of common sense, for without this it is impossible to teach school, and hence are willing to assist the physician in any reasonable request to improve the physical condition of the pupils.

As hygiene and sanitary matters are so nearly allied, the present paper will consider both of these matters. Webster says: "Hygiene is that department of medicine which treats of the preservation of health and prevention of disease"—derived from *Hygiea*, the goddess of health, daughter of Esculapius, who was the father of medicine. Poor Esculapius was struck dead by a thunderbolt from Jove at the request of Pluto, who feared that the teachings and practice of Esculapius would prevent mortals from dying, when naturally, the realm of Pluto below, would cease to receive the spirits of the dead and become a thing of the past. If this be true, Esculapius must have been a far more successful practitioner than any of his followers even in this enlightened twentieth century, with all its boasted improvement.

Returning to the subject—school houses are generally built with regard to the pocket-book of the board, the proximity of the most influential patrons, and rarely is the question of health considered. We find great, barn-like structures, with rows of windows on all sides; these are frequently closed in the morning till the air becomes foul and reeking with microbes. When this is intolerable, the windows are raised and cold currents rush in from every direction above and on a level with the heads of the pupils, causing colds with their endless complications of catarrhs, throat, lung and bronchial troubles. Can we wonder that so many cases of pneumonia and kindred diseases are contracted at school? This category includes our most dreadful enemy, the

Wealth is the difference between what you earn and what you spend.

*Read before the Florida State Medical Association, April 1903.

grippe, which positively runs riot in cold weather.

The arrangement of the windows causes a glare of sunshine from one direction in the morning and another in the afternoon, with a train of resulting headaches, and often diseases of the eyes.

It is said that it is useless to point out a fault without giving a remedy. In constructing a school house, a plan should be drawn by an experienced builder; windows and doors should be so arranged that there will be no lights in the faces of the pupils, and yet give good light and ventilation. Any architect would furnish such a plan at a trifling cost.

Frequently the arrangement of desks is faulty. We see big boys and girls humped over small desks, and little tots perched so that their feet will not touch the floor, sometimes with a glare of light in their faces, or else the eyes are strained by lack of light. A new arrangement of desks with regard to the size of the pupils, and the purchase of a few blinds or window shades may remedy this trouble, and a few words to teachers possessed of the necessary common sense—for the day has come when few others are in the school rooms—will show good results in the health of the children.

We ought to insist that the school-house grounds be fenced and shaded. A few shade trees along the road present a pleasing appearance, and refresh the weary traveller and his patient beast. Aside from the health consideration, boys and girls will learn some valuable lessons about the usefulness and beauty of our native trees. At school our young people receive training which lasts them through life, and ideas of the beauty of nature and an appreciation of the common blessings and uses of our trees are as necessary as grammar and geography. When we contrast the possibility of such buildings and grounds with the hot, barren surroundings of many of our school-houses, it is not pleasant to contemplate. It seems to be an innate principle of the young cracker to drive the school house axe deep into every green tree in reach, and soon the barrenness resulting will remind us that if the boys were taught to protect the trees, the men would not have to be held back by law from the wanton destruction of the forests.

As to the back yards and closets, they are generally too bad to be mentioned to ears polite. Here start the germs of typhoid fever and other

contagious diseases. The lime barrel should be in every closet and the children should learn the use of its contents.

The daily physical habits of the pupils should be observed, and where necessary, reproof and corrected. The senseless, vulgar habit of spitting on the sidewalks, steps, sometimes even the floor, should not be tolerated. As a sanitary measure, many cities and some of the States are passing stringent ordinances against this dangerous nuisance; and we physicians best know how much grippe, and how many dangerous diseases, as well as the great, white plague itself, are spread by this useless habit. The children should be taught to avoid it.

That good old father of history, Herodotus, along with many good yarns that are not exactly history, says that a certain king of Persia made a law prohibiting any one from spitting in the presence of another; and now, after the passing of three thousand years, we are enacting the same laws. This reminds us of the saying of another wise man, "There is nothing new under the sun." And this age ought to vote the ancient king a monument half as high as that of the immortal George Washington's.

Often drinking water of the school ground is bad. Usually the trustees sink a hole to a point where the water stands in it, and are satisfied. Much of the water is bad even filthy, and filled with disease germs; and again, there is a train of resultant diseases, such as typhoid fever, etc.

Much might be said in regard to training the muscles in the school room. Dumb-bell exercises can sometimes take the place of recesses, and a watchful eye on the positions of pupils in sitting and standing will give them larger chests and stronger lungs.

"Cleanliness is next to Godliness," saith the proverb; and while pupils are learning the conclusions of the whole matter from many books, the teacher should try to give them this lesson as well. A lavatory, or if that is not attainable, a wash basin, with abundance of fresh water, soap and towels should be provided. And so I might go on at length, for the subject is inexhaustible.

It may be said that these things are out of our line as physicians to consider; that they belong to the teachers, not to the doctors; but it took Hercules to cleanse the Aegean stables, and this is as great a task. But we propose to begin in time and keep clean the land. To train a child in the way he should go in cleanliness and care

of that wonderful temple of the soul, which God gave him, is to insure his not departing from it when he is old. All over the country in good, bad and indifferent surroundings, the teachings are doing their part; no community but what is benefitted by their heroic efforts to uplift and train our children. Without them we would in a few generations relapse into barbarians. Patient, self-sacrificing, energetic, faithful, they instill into the minds of their pupils lofty ideals and noble aspirations. How many of our great and wise men could tell you that their first uplift to the things that are high came through some noble little woman teacher. As Goethe says: "The woman soul leads us ever upward." Lemuel's mother must have had such a one in mind when she said: "Surely many daughters have done excellently, but thou excellest them all." And the doctor should work right with the teacher. The children may be immeasurably benefitted by hygienic surroundings, and when possessed of good health, the school room tasks are lighter. Many cases of "dullness" in children may be traced to weak eyes, or to a poorly nourished body affecting the brain. Indeed, Dr. Stiles has discovered that laziness is caused by a microbe; the *Uncinaria Americana*, which is indigenous to a sandy soil, and is somewhat allied to the microbe of malaria. Dr. Stiles has discovered in thymol an antidote for this germ; and the thought comes that it would be a good idea for the school boards to provide a bottle of thymol along with the chalk and charts and report blanks that the teacher may successfully combat the all-prevalent *Uncinaria Americana*, or "hook worm," as it is sometimes called. It would be easier to administer than the rod or ruler.

Finally, let us look more to the health of the rising generation. As physicians, we have to inaugurate every such reform. We have to combat every sanitary abuse, whether it be the slaughtering of ducks on the Ocklawaha, building dams on the Suwanee, killing fish in the Crystal river, overcrowding convicts in the phosphate and turpentine camps, or working the children in the mills. It is our humble privilege to vaccinate a stiffnecked and perverse people when deadly small-pox visits our land. We are graciously allowed the privilege of establishing quarantine when "yellow jack" invades our coasts.

If every individual knew and kept all the rules of health, many of the contagious diseases

would die out, and strong physical constitutions would enable our citizens to better withstand disease. Let us begin training the children in the school rooms, the teacher is doing her part, but the work is large. Let us realize our responsibility and come to the help of the schoolmaster against the mighty.

Correspondence.

Thyroids for Goitre.

Mr. Editor,—On June 1st, Miss A. W. applied for treatment for goitre the size of an orange. Both grandmothers had the disease, and several uncles. I gave my patient one hundred 5 grain capsules (P., D. & Co.) thyroids, and directed her to take one after each meal and at bedtime, and to paint the tumor with tincture of iodine every other evening. To-day, June 22d, there is not a vestige of the swelling to be seen.

W. S. CLINE, M. D.

Woodstock, Va.

[While we recognize the value of the thyroid treatment of goitre, the case spoken of by our correspondent could scarcely have been one of more than "menstrual goitre." An intimate relationship has long been recognized between the functions of the uterus and thyroid gland. Garrigues states: "The thyroid often is the seat of swelling at approaching puberty, and resumes, as a rule, its normal proportions after the establishment of menstruation. In many women the gland swells before each menstrual period." Dudley, in discussing the goitre of puberty, says: "Thyroid extract in doses of two grains three times a day will in some instances effect a rapid cure; if distinct improvement is not apparent in two or three weeks, the drug should be discontinued." It would mislead some practitioners if the case reported were to be published without the reminder that the thyroid swelling often occurs about the menstrual period.—*Note by Editor.*]

Reorganization of State Medical Societies.

Mr. Editor,—Should Virginia doctors fall in line with the doctors of other States merely for the sake of classification in the American Medical Association? This question may appear a

little impertinent to those who advocate the plans of reorganization of the A. M. A. on the basis of representation in the House of Delegates according to the number of county or local organization of each State. Be this as it may, in my humble judgment we should, in the words of Josh Billings, "*make haste slowly.*"

In the densely populated sections of the country local medical societies should be encouraged, as they would help to unite the profession and do much good both from a social and scientific standpoint. But in sparsely settled sections, where there are but few doctors, and these scattered from fifteen to twenty miles apart, as is the case in many of the counties in the southern and western States, I fail to see the advantages in county societies over the present plans of State organizations.

Take, for instance, the States of Florida, Washington, Dakota, etc., where there are only about 650 doctors to each State, or Utah, with her 257 doctors, Idaho, with 195 doctors, and Nevada, with only 64 doctors. Only a very small per cent. of these hold membership in any medical organization. Now, I can't see what advantage county organization could have over the State societies of these States. It seems to me the State organizations should be the predominating feature in uniting the profession in sparsely settled sections of the country.

From a political and practical standpoint, I think the majority of the profession will readily see, even if they fail to agree with me, that there are some very unpleasant, and I may add, objectionable features in the proposed plans of reorganization. While I am opposed to political issues in our medical organizations, yet there are many who may not be quite so liberal, but entertain entirely different views. Judging from my association with medical men from the various sections of the United States during our annual Conventions, I find it a very easy matter to discover a spirit of political or *sectional* jealousy existing in the minds of many medical men who are not disposed to forget the past dissensions of the two political sections, known as the North and South. Taking these facts into consideration, with the other considerations embodied in this article, I am of the opinion that this is not the opportune time for such a radical change in our present organization.

Concentration of power to one section of the country might be hazardous to other sections of the same country. Permit me to draw a few

comparisons in order to illustrate this point. If the House of Delegates of the American Medical Association is made up of representatives or delegates from the various local and county organizations that have a right to send delegates, you will see the point I am about to make in the comparisons, as follows: The medical population of the four States of New York, Pennsylvania, Massachusetts and Illinois is larger than all the thirteen Southern States and sixteen of the other States and Territories combined; hence we would have in the House of Delegates of the A. M. A. a larger representation from these five States than from twenty-nine (29) other States of the Union. The House of Delegates would have a larger representation from the three States of New York, Pennsylvania and Illinois than from all the thirteen Southern States combined.

Is this not convincing proof of the fact that under such a plan of organization there would constantly arise at our annual meetings of the A. M. A. contentions and discord over the distribution of honors in the election of officers to the various sections and other important functions of the A. M. A.?

As previously intimated, I am willing to encourage organization of the entire medical profession into local and State societies, where and when it is practical and beneficial to the whole profession; but I am not willing for the House of Delegates of the A. M. A. to be made up of any other material than that selected by and from the State Medical Societies, regardless of the local or county societies.

In reference to local societies, I beg leave to submit the views of some of our leading thinkers:

First. For an organization of any kind to be successful it must have embodied in its constitution and by-laws the necessary elements of success, and possess a sufficient amount of merit to keep its membership fully alive to the interests and growth of the organization."

Second. "For an organization to succeed and wield an influence for the good of the masses it must necessarily have a membership of sufficient strength to absorb the petit discords and antagonisms that so often mar the success of small organizations."

"No medical organization of less than thirty active regular attending members can be a success."

These conclusions have been reached after the most careful study of both sides of the sub-

ject, including the many hindrances of success, as well as the many adjuncts necessary for success.

Let every intelligent thinker of the Medical Society of Virginia give this subject careful consideration before casting his vote for reorganization.

A certificate of membership from any of our State medical societies should be a sufficient guarantee of the qualifications of a candidate for membership in the American Medical Association. Heaven forbid that a county cross roads (cross x bone) medical society should be empowered to pass on the fitness or qualifications of a candidate for membership in the A. M. A.

In conclusion, let me say to one and all: Foster and build up your State Medical Society, and make it the *capstone* of all other medical organizations, and second only to the A. M. A., and that only in the number of its membership.

Respectfully,

BITTLE C. KEISTER, M. D.

22 Seventh Ave., S. W., Roanoke, Va.

Book Notices.

Obstetrics. Edited by REUBEN PETERSON, A. B., M. D., Professor of Obstetrics and Gynecology, University of Michigan, etc. *Volume V, of the Practical Medicine Series of Year Books*, issued monthly, under the General Editorial Charge of GUSTAVUS P. HEAD, M. D., Professor of Laryngology and Rhinology, Chicago Post Graduate Medical School, etc. April, 1903. Chicago: The Year Book Publishers. Small 8vo. Cloth. Pp. 204. Price, \$1.25.

The present volume is one of a series of ten, issued at monthly intervals, covering the entire field of medicine and surgery. If subscription is made to the entire series, the price is \$7.50, which saves several dollars on annual subscription. The series is not a rehash of old books, but a symmetrical presentation of the subject named in the title, bringing the whole matter up-to-date. Dr. Head is to be complimented on his uniform selection of the best of authors for each book. Subjects considered at length last year receive but little space this year, and *vice versa*. Thus the volume of this year is supplementary to the volume on obstetrics, etc., last year. It is well indexed, so that ready reference is available. If the practitioner knows the series it

needs no word of praise from us. But to the new subscriber, we say that he will find in the full series a most valuable review of the progress of the year in medicine, etc. Numerous illustrations are introduced whenever required. This volume on *obstetrics* is one of constant use to the practitioner.

Chronic Headache and its Treatment by Massage. By GUSTAF NORSTROM, M. D., of the Faculty of Stockholm. G. E. Stechert, New York and London. 1903. Pamphlet, 8vo. Pp. 57. Price, \$1.

The Swedes have taken the lead in developing the value of massage in the treatment of disease, especially chronic diseases, such as migraine, sciatica, etc. In the publication under notice, the author takes a properly conservative view. He does not claim that massage is an infallible remedy, which has no contra-indications and no failures. But these contra-indications, so far as known, he points out, and he confesses at times to failures of success. Yet in the large majority of cases massage of the muscular insertions to the cranium, or of the fleshy part of the trapezius, the sterno-cleido-mastoid and other muscles of the neck, performed for a sufficient time to remove the chronic inflammatory deposits also causes the neuralgia to disappear. The presentation of the subject is well made, and the clinical observations recorded are convincing. The addition of a synoptical table of contents, or of an index would facilitate the reader in finding out the points he desires especially to look into.

Diagnosis of Diseases of Women. By PALMER FINDLEY, B. S., M. D., Instructor in Obstetrics and Gynecology, Rush Medical College, in affiliation with the University of Chicago, etc. *Illustrated with 210 Engravings in the Text and 45 Plates in Colors and Monochrome.* Lea Brothers & Co., Philadelphia and New York. 1903. Cloth. 8 vo. Pp. 494.

Such a work on *Gynecological Diagnosis* has long been needed. And when the merits of this book are known to the practitioner, he will be very much "in his own light" not to get a copy for frequent consultation. The text and picture illustrations, for example, of diagnosis of extra uterine pregnancy, furnish such a graphic description of the conditions that the reader feels that he has been under clinical instruction by a master of the subject. Beside the most excellent chapters on diagnosis of the various truly gynecological conditions, the chapters on diagnosis of diseases of the kidney, of the bladder, etc., are useful to the general practitioner. Full

descriptions of instruments, etc., and their uses in diagnosis in all such cases, the taking of case histories, the preparation of the patient, and the methods of procedure by the doctor with reference to diagnosis, etc., are all clearly presented. Much space is given to a thorough discussion of morbid anatomy, since the recognition of the pathology of the pelvic organs in a large measure constitutes the diagnosis. Special stress is laid on the fact that without the microscope, a diagnosis is not always possible. The treatise will prove of practical advantage to the well advanced college student in the study of clinical lectures and demonstrations, while to the practitioner—whether a specialist in diseases of women or a genral doctor, who has to diagnose the conditions in the woman as he meets them—we would say that this book, just as it is, is almost indispensable. We know of no other English written work on this subject. The author satisfies the requirements of those who feel the need of more comprehensive and practical information than can be given in the general text-books on diseases of women.

Manual Treatment of Diseases of Women. By GUSTAF NORSTROM, M. D., of Faculty of Stockholm. Publishers: G. E. Stechert, New York and London. 1903. Paper. 8vo. Pp. 230. Price, \$2.25.

The author has, perhaps, done more than any living physician to popularize the scientific use of massage in the treatment of persistent passive congestion and chronic inflammation of the soft parts. Since 1876 he has constantly employed it, and has cured bad cases of chronic metritis with structural changes, complicated or not with uterine displacements or affections of the appendages. Dr. Reeves Jackson, of America, professors Schultze and Schanta, in Germany, Dr. Ott, in Russia. Professors Pinard, Stapfer, of France, etc., long since have become earnest advocates of the practice. Details of methods of application are carefully given for different uterine affections, such as subinvolution, prolapse, fibroids, parametritis, ulcerations of the cervix, diseases of the tubes and ovaries, etc. It is a misfortune that no index to the book is given, for one loses too much time in thumbing pages to find out what he wishes. We commend the *Manual Treatment* as, relatively speaking, a new book relating to a new method of dealing with diseases of women. Our criticism would be that there is too much verbiage. The book

could be condensed to one-half the space it now fills with advantage to the reader and student.

International Clinics. *A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Pediatrics, Obstetrics, Gynecology, etc., etc.* Edited by A. O. J. KELLY, A. M., M. D., Philadelphia, U. S. A., with the Collaboration of Eleven Eminent Authorities all over the World, etc. *Volume I. Thirteenth Series*, 1903. Philadelphia: J. B. Lippincott Co. 1903. Cloth. 8vo. Pp. 306—including the Index.

The popularity of these quarterly publications may be imagined when informed that the publishers had to return orders for copies of the last annual numbers unfilled. This volume (for April, 1903) is a little late in issue, but loses none of its value to the practitioner, since all the subjects discussed refer to conditions of constant occurrence, and the articles represent the latest of approved views. Beside matters of treatment, surgery, medicine, pediatrics and orthopedics, a very excellent review of the progress of medicine, therapeutics and surgery during the year 1902 is appended—occupying about 80 pages. The work is too well known to require further mention at our hands. It is an essential to the doctor who proposes to keep up with the times. A good index is appended.

Editorial.

Compulsory Vaccination, etc., Legal.

The Supreme Court of Massachusetts, in full bench, on April 3, 1903, handed down a decision in the case of A. M. Pear and Jacobson—holding that the action of local boards of health requiring compulsory vaccination or revaccination of all inhabitants of a city or town, and subjecting persons over twenty-one years of age to a penalty for refusal, is constitutional. The defendants were complained of, and convicted for refusing to comply with such a requirement of the Cambridge Board of Health, passed while small-pox was prevalent. It was claimed by the defendants that the act was unconstitutional, as an alleged violation of their right to personal liberty, and it was further claimed in the case of Jacobson, that vaccination had injurious effects on the human system, and that he should

have been allowed to show them to support the claim that the statute was unconstitutional. The court holds that it is within the power of the Legislature to enact this law; that, plainly, its object, the prevention of small-pox, is worthy of the intelligent thought and earnest endeavor of legislators, and for the common good; that it comes within the police power of the Legislature, and that the application of a good law to an exceptional case may work a hardship, but there is no reason to suppose that the enforcement of the requirement in the present cases was conducted harshly. Jacobson's offer of evidence is held to have been rightly excluded. The court says that the only "competent evidence" that could have been presented to the court to prove his propositions about vaccination was the testimony of experts, giving their opinions, and even with such expert testimony it holds that the Legislature could not be held to have transcended its power in enacting this statute on its judgment of what the welfare of the people demanded.

"The New York Medical Journal" and "The Philadelphia Medical Journal"

Have been consolidated—the chief office being in New York, and Dr. Frank P. Foster, of the *New York Medical Journal*, remaining editor-in-chief. While our best wishes attend the new enterprise, we cannot say that we rejoice. Philadelphia needed a distinct journal of its own—just such as was the *Philadelphia Medical Journal*. It may have been that each interfered in part with the greater success of the other. But we can hardly hope that the amalgamation will prove a material improvement of either quality or quantity. We predict that with such opportunities as Philadelphia offers for a successful medical journal, it will not be long before another journal as pretentious as the one just united with the *New York Medical Journal* will be started in that city.

An "English Hospital Certificate"

Is advertised as being issued by the "Christian Hospital, Chicago," of which "John B. Murphy, M. D., LL. D., is President." It seems that this advertisement has been widely circulated in the profession—so widely that it needs no reproduction in these columns to show the scheme. The editor of this journal was gratuitously insulted by having one addressed

to him. We have looked in vain for some denunciation by Dr. Murphy of the use of his name in such a connection, but not having seen any denial by him or for him, we feel disposed to move his expulsion from professional recognition because of such flagrant quackery of method. *The Texas Medical Journal*, June, 1903, editorially voices the sentiment of the profession in saying: "And Murphy, an unusually gifted young surgeon, who has startled the world by the brilliancy of his genius and his operations, a young man whose fame and fortune were secured by virtue of his anastomosing device in resections of the intestines, who was the centre of interest at the Tenth International Medical Congress in St. Petersburg while he read a paper giving an account of his successful ligation of the sub-clavian artery for gunshot wound, a courtesy unprecedented; an exemplar to younger physicians now stoops from his exalted position to engage in what (Dr. F. E. Daniel) the editor conceives to be a shameful scheme to hoodwink the country doctor and skin the confiding and unsuspecting afflicted—a species of quackery unsurpassed by the bare-faced Niles Hospital scheme. Shame! Shame!"

Obituary Record.

Dr. Daniel William Lassiter,

Died at his home in Petersburg, Va., July 3, 1903, after a long period of declining health. He was born in Northampton county, N. C., May 24, 1827. He received his academic education at Hogan Academy, N. C., and graduated in medicine from the University of Pennsylvania in 1851, and located in Petersburg, Va., where his entire professional life was spent, except such interruptions as were due to service during the Confederate war. He was one of the original members of the Medical Society of Virginia in 1870, and has held various positions of trust in that organization. He was a practitioner of wide influences, and his opinions, either as to matters of practice or of ethics, were taken as those worthy of a teacher. While his death had been expected for some months, it is nevertheless deeply felt by hosts of relatives and patrons, and by the profession of the State.

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Original Communications.

SOME REMARKS ABOUT ACCESSORY SINUS DISEASE.

By JOSEPH A. WHITE, A. M., M. D., Richmond, Va.,
Ophthalmic Surgeon for the C. & O. and Southern Railways; Pro-
fessor of Ophthalmology in the University College of Med-
icine, Richmond, Va.; Member of the American
Ophthalmological Society, the American L.,
R. and O. Society, etc., etc.

The accessory sinuses are pathologically affected much oftener than formerly supposed, as has been already sufficiently demonstrated by recent investigators and observers. Most of the work has been done in the last decade—since 1893.

It seems strange that this fact was overlooked for so long a time when we come to consider their relationship and connections with the nasal spaces, which are subject to inflammatory reaction and pathological changes more frequently than any other part of the human system.

A so-called cold in the head is probably the commonest of all the ills to which man is heir, and it is a rare thing that it is unaccompanied by implication of one or more of the accessory sinuses, either directly or indirectly. These sinuses are lined by a continuation of the nasal mucous membrane, and when the latter is inflamed the inflammation extends directly into the sinuses through the ostia, or these latter are closed by the swelling of the inflamed mucosa, obstructing the exit of the normal secretion, and if continued for any length of time results in altered secretions and pathological changes in the cavities. How frequently frontal pain, pain over the bridge of the nose, or pain over the cheek bones accompanies a cold in the head! Is this pain due always to pressure of the swollen nasal tissues on the filaments of the trigeminus, or is it not frequently due to inflammation or retained secretion in the sinuses them-

selves—the frontal, the ethmoidal, or maxillary?

In most of these cases the thin watery secretion, which flows so freely at first, changes into a mucous or purulent secretion. Now a discharge of pus from the nose, whether chronic or acute, is in most cases from one or more of the accessory sinuses; for the so-called purulent rhinitis, outside of diphtheritic and erysipelatous inflammation, is necessarily a rare condition, as there is no logical explanation for it. We are in the habit of saying that chronic nasal catarrh is the result of neglected attacks of acute rhinitis, and this is probably true of chronic hypertrophic rhinitis with a simple exaggerated mucous secretion; but this cannot explain a purulent discharge anteriorly or posteriorly, whether it flows away freely or forms in crusts.

Certain forms of adenoids, especially the irregular soft masses, by the retention of secretion, conduce to the formation of pus, independent of sinus involvement; but with this exception and certain specific inflammations of the nasal mucosa, we must look to the accessory sinuses for the origin of the pus we find in so many cases of so-called nasal catarrh.

In most of the acute cases following rhinitis the purulent discharge, after a few days, disappears, or in other words, there is a spontaneous cure of the sinusitis, although this result may take several weeks in a few cases. We do not have the opportunity of localizing the trouble in many of these cases, and, therefore, can only speculate as to the frequency with which the sinuses are affected, and which one of them is most frequently involved. I should say the frontal sinus and ethmoidal cells, although the antrum does not escape as often as we may suppose. I have seen quite a number of such cases, and have been a victim of it myself. This statement is heretical, I know, because the maxillary sinus is supposed to be in-

volved oftener than any of the others. We must, however, remember that we have the chance of investigation presented only when the recovery is slow or there are some annoying complicating symptoms, and, moreover, that trouble in the antrum is easier of diagnosis than in the other sinuses. It is pretty well admitted that lachrymal stricture, or obstruction in the canal leading to another accessory sinus of the nose—viz., the lachrymal sac—is due to rhinitis. Now, what are the consequences of such obstruction? Retained and altered secretions give you a muco-purulent discharge.

Apply the same process to the entrances to the other sinuses in acute inflammation of the nasal tissues, and we get the same result—viz., retained and altered secretions. As the anatomical conditions are not exactly the same, the obstructed entrances, in most cases, are reopened, and spontaneous cure follows free evacuation of the retained secretions; but now and then we meet a case where the pathological changes are more severe, the mucous lining becomes permanently altered, and requires something more than *vis medicatrix nature* for its restoration to a normal condition.

This is especially true of the antrum, as its ostium is at the top of the sinus instead of at the bottom, as in the frontal and ethmoid, and, therefore, there is less chance of free drainage and spontaneous recovery. This probably explains why we find more cases of *chronic empyema* of the antrum than of the other sinuses. By the same reasoning we should find chronic empyema of the frontal sinus less frequently than in any of the other sinuses, because its drainage is better. Moreover, in at least *one-half* of the cases the frontal sinus and ethmoidal cells drain through the infundibulum into the ostium maxillare along the upward curve of the uncinat process, and cause direct infection of the antrum, which may have an empyema secondary to acute frontal sinusitis, which has been spontaneously cured. Hence it is that we are called to intervene oftener in antral than in frontal sinus trouble.

When the naso-frontal duct opens into the middle meatus in front of, or to the inner side of the infundibulum, as it does in about half the cases, there can be no infection of the antrum. But in the other 50 per cent. it opens directly into the infundibulum along with the ostia of the anterior ethmoidal cells and the antrum. The posterior ethmoidal cell and the

sphenoid sinus open into the superior meatus and empty posteriorly. Hence we might conclude that pus coming from the posterior nares emanates from these latter or from adenoids, whilst pus anteriorly comes from the antrum, the anterior ethmoidal cells, or the frontal sinus, although pus from the latter might drain backward when the naso-frontal duct opens directly backward into the infundibulum.

While this statement might be correct from an anatomical standpoint, we must not forget that pathologically changes may have occurred, and that as a result of the empyema the bony walls of these sinuses may be affected and that new openings for pus may be established which will change the direction of the flow. In a case I recently treated I am satisfied the right posterior ethmoidal cell communicates with the anterior one, because the probe can be passed too far back to enter the anterior cell alone. It may even go into the sphenoid sinus, as I could pass it back four inches.

Other etiological factors to be considered are influenza, grippe, pneumonia, scarlet fever, measles, typhoid fever, diphtheria, small-pox and cerebro-spinal meningitis. The sinusitis may be by direct extension from the nose or the naso-pharynx in these troubles, or may be by infection from the blood vessels as the result of a general systemic infection.

Lastly, we have to consider, what is by some authors regarded as the commonest factor in producing antrum empyema—viz., dental diseases. This fact was so universally accepted for a long time that whenever antrum disease presented itself we always looked for an unsound tooth as the most probable cause, and if we failed to find it were disappointed. I have seen so many cases of antrum trouble without unsound teeth that I doubt if its cause is not to be oftener found away from the alveolus, even when there is dental disease, which may be a coincidence and not a cause. Formerly, when I opened the antrum through the alveolus I have been guilty of having a sound tooth drawn to get into the cavity. As I no longer enter the antrum in this way, I am not likely to repeat this offence.

The diagnosis is frequently difficult in attempting to localize the source of the discharge. In wide nostrils it is easier than in narrow ones. The removal of the middle turbinate is nearly always essential to a satisfactory diagnosis. The probe is probably our main reliance in

exploring all the sinuses except the antrum. It certainly is the only means of diagnosing bone disease when this is present. For the antrum, exploratory puncture is easy and always reliable if we use *enough fluid*; otherwise, we may make a puncture to locate trouble in the antrum and fail to find it. *Transillumination* is very unreliable, even in the antrum, where it has the best field of usefulness; but, although it has been a disappointment, it is not to be discarded as a help to diagnosis.

When the naso-frontal duct opens into the middle meatus, anterior to the infundibulum, there is, as a rule, very little difficulty in passing a probe into the frontal sinus; but when it opens into the infundibulum the probe may enter one of the openings of the anterior ethmoidal cells and be misleading, especially if it enters a cell the roof of which lies above the plane of the fronto-nasal suture.

Sometimes the opening into the infundibulum looks directly backward, and is difficult to enter. The probe should be inserted between the uncinate process and the ethmoid bulla—*i. e.*, along the hiatus semi-lunaris, which is the entrance to the infundibulum, although if the ethmoid bulla is well developed the hiatus is too small to admit a probe.

Of course, if the anterior half of the middle turbinate has been removed the probing can be accomplished more satisfactorily.

Sometimes when we think the end of the probe is in the cells, pressure downward will show it is only held between the turbinal and outer wall, as it will glide down over the middle turbinal, whereas, if it is in the cells the lower edge of the opening will prevent its slipping down.

I have not the time to go into all the diagnostic signs of sinus disease, but one symptom—*viz.*, pain—is deserving of mention, merely to call your attention to its uselessness in helping us to locate the trouble, as the headache in frontal and ethmoidal changes is often about the same, although occipital pain may help in diagnosing sphenoid sinus empyema. Even in antrum disease the pain is sometimes more severe over the bridge of the nose and over the brow than in the infraorbital region. This pain, both in frontal sinus and antrum disease, is sometimes excruciating, and exhausts the patients by its severity. It is intermittent, it is true, but the constant recurrences, at least once in twenty-four hours, and lasting for hours, in-

capacitates its victims for any kind of work. The pain is often described as a sensation of something trying to force its way through the frontal bones, and sometimes as if one or the other eye were being pushed out of the socket, and it radiates up on the brow, out on the temple, sometimes down on the cheek and even occasionally into the ear, so that it may, and often is mistaken for tri-facial neuralgia.

Treatment.—In acute troubles of the sinuses treatment should be directed to relieving any pathological conditions in the nose and nasopharynx, so as to insure early and good drainage to the sinuses, such as the removal of *polyps*, or a hypertrophied middle turbinate, etc. In cases permitting of it the sinuses themselves should be syringed with sterile and antiseptic washes, followed by injections of protargol, 10 to 20 per cent. solution, or formalin, 1 to 1,000. If there is much pain accompanying acute inflammation in the antrum an opening into its nasal wall, just under the inferior turbinate about the juncture of its anterior one-third with the posterior, two-thirds can be readily made with a trocar, and the cavity washed out and kept clean, which will relieve the pain. Whilst this should always be done in the antrum at *any stage* of the pathological process, because of the difficulty of the contents being evacuated through the normal ostium, or even through the more posterior and lower situated accessory ostium so often present, it is not advisable to be in any such hurry about an external opening into the other sinuses in acute inflammations, although, as above mentioned, any pathological conditions in the nose should be rectified to give as free drainage as possible, although this does not always relieve the pain. It is best to wait about six or eight weeks for spontaneous cure, unless the orbital and ocular symptoms, which now and then are manifested in connection with frontal and ethmoidal inflammation, demand earlier intervention. Fortunately, thus far in my experience I have never had any serious *ocular* disturbance accompanying frontal sinus disease but once, although I have seen quite a number of cases of empyema of this cavity.

Operative intervention is always called for in chronic empyemas of the antrum, frontal sinus, ethmoid cells or sphenoid sinus. In fact, when we are once satisfied that the condition is a chronic one, we cannot operate too early for the thorough removal of the pathological conditions within the sinuses, and the establishment

of free drainage in order to prevent serious consequences, such, *e. g.*, as necrosis of the sinus walls, with the attendant risks of damage to neighboring organs, and even loss of life from brain complications, as extra-dural abscess, lept meningitis and cerebral abscess in frontal sinus diseases—and orbital troubles in maxillary disease, or secondary involvement of the brain from thrombo-phlebitis, phlegmon of the orbit, or even *brain abscess* from rupture into the pterego-maxillary fossa and along the greater wing of the sphenoid into the brain, as in Westmayer's case.

In the surgical treatment of the antrum the best method is the Caldwell-Luc operation, or some modification of it. An opening is made in the canine fossa large enough to illuminate the interior and examine its condition with a mirror, and sometimes large enough to introduce the finger. When all the pathological contents of the antrum have been removed, a second opening should be made through the anterior portion of the nasal wall of the antrum, level with its floor, and enough of the inferior turbinate removed to allow the opening in the canine fossa to be closed and the treatment and the drainage kept up through the nose. The cavity is packed with gauze, which is changed as occasion demands, and if the opening in the nasal wall has been made sufficiently large there is no difficulty in removing and replacing the packing through the nose. As granulations fill up the cavity the amount of gauze packing grows constantly less until the sinus is practically obliterated.

In regard to the frontal sinus, radical operations are sometimes required, such as the entire removal of the whole anterior wall of the sinus and the application of the periosteal flap to the posterior wall, thus obliterating the sinus, as is done by Kuhnt, or the still more radical procedure of Killian. Both of these operations are attended with decided deformity and should be reserved for the worst cases, as satisfactory work can be done without any deformity whatever in many instances. All the suggested methods of opening the sinus through the nose should be condemned, because of the danger attending them. The only safe operation is an external opening. I generally make use of a modification of the Ogston-Luc operation. I make an incision just under the eyebrow along the supra-orbital ridge, running well into the inner angle of the bridge of the nose, then sepa-

rate the periosteum from the bone upwards from the incision, and lift the tissues up as high as possible, to allow free access to the anterior wall above the supra-orbital ridge. If the tissues cannot be raised sufficiently this way, a vertical incision can be made down to the bone at the inner angle of the wound in one of the furrows of the brow. This will allow the periosteal flap to be raised higher, and with a mallet and chisel a small opening is made in the anterior wall of the sinus close to the inner angle and *above* the supra-orbital ridge for examination, and if the sinus is much diseased, as much of the anterior wall is taken away as the pathological conditions may demand. The nasofrontal duct is then enlarged by the gouge, curette or reamer, and if the ethmoidal cells are involved they are also thoroughly curetted so as to give a large opening and ample drainage into the nose.

Thorough curettement is necessary in both antrum and frontal sinus disease if there are any granulations, polypi or pyogenic membrane, followed by the application of chloride of zinc, or of pure carbolic acid, which is neutralized with alcohol. The cavity is then packed with gauze, in this way differing from the classic Ogston-Luc operation. As stated above, the exterior opening in the antrum can be closed up, save in a few exceptional cases, but with the frontal sinus it is advisable to keep the lower inner corner of the external wound open for some time after the operation in most cases, always as long as there is any discharge from the cavity, which may be for a few weeks or for several months. This is also a deviation from the Ogston-Luc operation, in which the external opening is closed, the sinus drainage through the nose, which is unreliable, exposing the case to reinfection from the nose, and does not allow free and thorough cleansing. Occasionally the operation has to be repeated because of the recurrence of granulations or polypi.

The after treatment is to keep the parts as clean as possible by sterile washes and the use of protargol, nitrate of silver, carbolic acid, bichloride or formalin solutions, all of which have their advocates, and all of which are useful. The slight deformity resulting from the depression of the skin by its adhesion to the edges of the bone opening is easily remedied by dissecting it loose and uniting the skin with sutures, so that when the case has recovered there is actually no deformity by this method,

except a slight depression in some cases where much of the anterior wall had to be removed.

Where the ethmoidal cells are involved without frontal sinus or antrum disease complicating them, they should be operated on from within the nose with hand-burr, gouge or curette after removing the turbinate.

200 East Franklin Street.

INJURIES OF THE EYE AND THEIR COMPLICATIONS.*

By E. OLIVER BELT, M. D., Washington, D. C.,

Surgeon to the Episcopal Eye, Ear and Throat Hospital, Freedmen's Hospital, B. & O. Railroad, etc.

The title of this paper opens a wide field for consideration, but it is my purpose to confine my remarks more especially to such injuries as are most likely to come under the observation of railway surgeons—for example, those occurring in railroad construction from blasting, flying particles of stone, dirt, powder, lime, etc., and those seen in machine shops, such as from small pieces of emery or steel, molten metal, acids, etc.

Cinders are the bane of railway travellers, but unless imbedded in the cornea the service of the surgeon are not usually sought. In these cases, when not easily dislodged, after instilling a few drops of cocaine, they can frequently be removed with a cotton wrapped probe or match stick, which has been dipped in cocaine. Failing in this, a corneal spud must be used. Unless infected, few complications ensue. It is sometimes thought to be the cause of the formation of a pterygium.

Small pieces of emery and steel frequently become imbedded in the cornea of workmen in the machine shop; they are to be removed in the same way, and the eye irrigated with boric acid or bichloride of mercury solution. Eyes filled with dirt from blasting should be irrigated as quickly as possible, and all foreign particles should be carefully removed.

In the case of injury by powder explosion, after irrigation, each particle of powder should be picked out with a needle or spud, or with a cotton wrapped applicator dipped in hydrogen dioxide. Olive oil or borated vaseline may then be used in the eye if it is burned. Small grains of powder may be imbedded in the conjunctiva

indefinitely without doing harm. Burns by lime are usually very serious, the cornea may become opaque, or even slough, or the conjunctiva and cornea may be so burned that symblepharon, or complete union of the lids and eye-ball, may ensue, and sight be lost or permanently impaired. The lime should be removed as quickly as possible by irrigation or otherwise. Vinegar or a solution of cane sugar instilled will partly neutralize the lime and help to loosen the particles which often firmly adhere. Irrigation with milk is better than water in cases of caustic alkalis. Atropine should be instilled, and olive oil or vaseline used several times a day. A bandage should be put on—cold compress applied during the first twenty-four hours. Adhesions between the lids and eye-ball should be broken up and paraffin inserted between the lids and eye-ball to prevent union. Cocaine, 10 per cent. solution, will relieve the pain to a marked extreme.

Burns by molten metal, steam or hot water will require much the same treatment, but after irrigation an ointment of vaseline, boracic acid and cocaine may be used, and the eye bandaged and excluded from the air as much as possible; paraffin may be necessary to prevent adhesion.

Burns by carbolic acid may be neutralized by alcohol. Other acids by bicarbonate of soda solution and alkalis by vinegar. The complications following these burns are corneal opacities and symblepharon. If part of the cornea remain transparent, an iridectomy may reclose the vision. For symblepharon a skin graft is usually necessary, though a flap of skin from the breast or cheek can sometimes be used. When such burns are so bad that the eye is lost, especial attention should then be directed toward securing a socket in which an artificial eye can be worn. For unless great care is exercised this difficulty will result from cicatricial contraction.

In dealing with lids that have been cut or lacerated, care should be taken to bring the lid margins in perfect apposition, and thus prevent a troublesome epiphora or deformed lid.

The railway surgeon has much to do with penetrating wounds of the eye, especially those produced by flying pieces of iron or steel. Those penetrating the cornea may cause immediate infection or result in prolapse of the iris or traumatic cataract. Atropine should be instilled in all cases, and when the iris cannot be replaced, it should be excised. Cold compress should be applied for the first twenty-four

*Read before the B. & O. Association of Railway Surgeons at Cleveland, Ohio, June 18, 1903.

hours to prevent iritis or injurious swelling of the lens, if it has been injured. The solutions used should be sterilized or contain boracic acid formalin or bichloride. Traumatic cataracts may be kept under observation a short while; occasionally complete absorption occurs. If not, successive needling may be required, or if in patients over twenty-five years of age, extraction may be necessary. If there is reason to believe that the steel or iron is in the eye, the Haab magnet should be used for its extraction. The X-rays may be of use in determining the presence of such bodies, and aid in their location.

Still more serious are the injuries through the ciliary region, as they may not only cause blunder in the injured eye, but in the other by sympathetic inflammation. The foreign body should be extracted, if possible, and under strictly asepsis the scleral wound, if large, should be closed with sutures. Frequently the eye is filled with blood, and the impairment of vision cannot be measured until the blood is absorbed. Sympathetic trouble in the other eye is most apt to occur within six weeks, but it may be years. If the vision is not destroyed, the patient should be warned of the danger and advised to seek immediate treatment upon the slightest indication of trouble. If the eye is blind, as a rule, it should be removed. It is the duty of the surgeon to prevent disfigurement as much as possible, and when enucleation is found to be necessary, a hollow gold or glass ball should invariably be inserted in the orbit to prevent the sunken appearance and give better movement to the artificial eye. If properly done under aseptic conditions, in a modern hospital, there will be little reaction, and the patient need not be kept from work longer than a week.

Briefly summarized, then, our duty in these injuries to the eye is to remove the cause, and neutralize its action as quickly as possible by the use of the proper antidotes. Prevent infection by absolute cleanliness, and be watchful to avoid the complications so prone to occur:

17th and I Streets, N. W.

A red sunset is an indication of a fine day on the morrow. "When it is evening ye say it will be fair weather, for the sky is red."—Matthew 16: 2.

CASE OF FRACTURE OF SKULL.*

By WADE H. ATKINSON, M. D., Washington, D. C.

Mrs. G., female, white, 45 years old, was heard groaning in her room about 5 A. M., December 10, 1901, and after her door was forced a horrible sight presented itself. The floor was bloody, the bed was bloody, there seemed to be human blood everywhere, and the large, thick clots, as well as the patient's condition, showed that bleeding had been going on some time. No history of the case could be gotten. The patient's head, face, shoulders and arms were bathed in blood; eyes black and features bruised and swollen almost beyond recognition. Pulse scarcely perceptible, and still the constant effort to vomit brought blood and mucus from her nose and mouth. Skin was cold and clammy.

I scarcely knew what to do at first, but upon a moment's reflection I gave a hypodermic of ergotol, hoping to contract the capillaries and force the blood to the brain centers. I could give this while her friends procured water, etc., for me to prepare other hypodermics.

I gave large doses of strychnine, digitaline, nitroglycerine and whiskey hypodermically. A glance at the wound showed coagulated blood had stopped profuse bleeding; so I stripped the patient of bloody gown and wrapped her in dry blankets, putting hot bottles around her as rapidly as they could be prepared. The stimulants had but little effect upon the pulse, and normal salt was my next hope; so I sent hurriedly for an assistant, with instructions to bring a transfusing apparatus. By the time Dr. A. B. Hoøe arrived reaction was very perceptible and transfusion or hypodermoclysis was deemed unnecessary.

There was a wound about two inches long over the right eyebrow across the forehead nearly to the hair. The frontal bone was driven into the brain about half the length of the wound. The left side of the face was contused, with bleeding points; the molar prominence was driven in; the left inferior maxillary bone was fractured above the angle; left ear shredded and there was a contused wound back of same ear. There were a few bruises or discolorations on the arms and a contused wound on thumb. Cleaning the wounds preparatory to closing them showed their serious extent; so we deemed it advisable to remove her to a hospital.

*Read at a meeting of the Medical and Surgical Society of the District of Columbia, December 18, 1902.

We called Dr. J. Ford Thompson in consultation, who found it necessary to trephine to enable him to elevate the piece of bone where driven into frontal lobe of the brain, replacing this large spicula. Considerable brain matter exuded. Lacerated ear was stitched, some false teeth and bridge work were removed to facilitate feeding. Dressings and bandages were then applied, which held the fractured jaw very well in place. Patient stood operation fairly well.

The symptoms of concussion were very pronounced. Pulse, 68; weak, thready; respiration, 12; temperature, 99.4 F., and she was unconscious, of course, but active. Delirium followed the anæsthetic, tossing and pulling at bandages at hour intervals; a dark, bloody fluid was frequently vomited. Morphia was given hypodermically and later normal salt solution per rectum. Restless, intermittent pulse, abdominal breathing, and could not be aroused.

On second day, mind seemed little clearer, understanding enough to answer some questions; threw arms above head, tossed constantly about the bed and complained of pains in head. On the third day after injury, she had paroxysms of excitement similar to convulsions, also picked at bed clothing; was restless, nauseated and vomited bright blood, refusing all nourishment, even spitting it out if urged by putting it in her mouth. To nourish her we fed her with a medicine dropper, often filling her mouth little by little, and as she would try to talk would swallow almost involuntarily; when asleep we could feed her this way, putting the dropper through the opening where her teeth were removed. She did ask for, and drank, some water. Bowels were moved with enema. On this third day chloral and bromide were given to rest the patient, but failed to control the active delirium that was exhausting. Her respiration was 20.24; pulse, 75.96; temperature, 100.5; delirious to such an extent that patient was almost unmanageable; throwing arms and legs around were the most prominent symptoms. When quiet and sleeping the least touch to her body would bring on paroxysms of violent strangles. We unloaded bowels by enema, gave sedative, etc., as well as nourishment per rectum.

On fourth day she complained of constant pain in head, would scream and yell at intervals. Only improvement noted was that of patient asking for ice water and drinking it freely.

Sixth Day.—Right eye was swollen and bulging. An incision was made through upper lid near the brow and pus evacuated, the same in character as that washed from wound of forehead; irrigation showed communication between them, and at the same time there was excited swallowing, which showed the presence of fluid in the posterior nasal cavity. Therefore, there was a communication between the fracture of the frontal bone, through the orbital plate and into nasal cavity. Just at this time it was impossible to tell how far toward the base of the skull the fracture might extend. Wound was irrigated and dressed twice daily for several weeks, during which time it was necessary to have two or three assistants to hold her hands and head in position.

Eighth Day.—Pulse was weaker and irregular, respirations were bad, feet and hands cold. There was very slight response to stimulants given hypodermically. Patient seemed to be sinking; so I resorted to normal salt solution by hypodermoclysis. It revived her and marked improvement followed for several days. These favorable symptoms were temporary, and she gradually grew worse again about the fifth day after the normal salt was given. About this time it was noted that the patient had a desire to hold tight to something. Pain in her head and restless spells occurred at intervals.

From the eighteenth to twentieth day restlessness was the most dominant symptom, during which time there was noticeable difference in motion of right and left side. Gradual loss of sensation and then motion was noted in left arm and leg, and at the same time the right side of face was drawn. The right hand was held tightly to the back of head; the other arm drawn to her side—this hand tightly clinched. Left leg held flexed. Deglutition difficult. Urine and feces passed involuntarily. Pulse and respiration were again weak and irregular. Could not be aroused enough to answer or respond to questions. The fungus growths around wound in forehead were cleaned away and examination with finger showed absence of brain tissue, and its loss seemed to be the cause of paralysis, instead of pressure.

On twenty-first day, while dressing this wound, the head was suddenly thrown back and at the same time convulsive-like movements occurred. In this low state of vitality again she seemed to be going into an exhaustion or collapse and the normal salt was given by hypo-

dermoclysis, which brought about a splendid reaction in two hours. She was inclined to talk as she brightened up, although her voice was low, weak and hoarse; also labored breathing. There was constant motion of right hand while the left side was perfectly motionless. Her pulse grew full and regular; breathing easier, steady, but temperature remained about 100. Within twenty-four hours patient recognized me, answered questions, yes or no, or by a nod.

For ten days following normal salt patient's condition was variable; mind was clear enough at times to express wishes and recognize a few friends, but was talkative and restless. She took a little nourishment well at times, and again swallowed with great difficulty. She was kept alive by constant care and feeding a spoonful at a time whenever there was any possible hope of getting her to swallow it, at the same time giving nutrient enemata, normal salt and even medicines per rectum.

About the ninth day after the last salt solution by hypodermoclysis there was noted a little motion in left hand, which gradually increased until the hand, arm and leg, respectively, were quite mobile, and on the twelfth day after last normal salt her mind reached its acme of brightness. These symptoms fluctuated, better and worse, until about the fifteenth day after the normal salt, or the thirtieth day after the injury, and the paralysis gradually returned in the right face, left arm and leg, and remained until death.

During these two periods of paralysis several consultations were held to determine the advisability of further operative procedure to relieve this symptom. It was decided that paralysis was due to loss of brain substance, rather than pressure, and conservative treatment was followed. The clinical chart gives a long range of fever and makes it all the more interesting, as there was a post-mortem showing the true cause of the fever.

Here was a pitiful case, paralyzed mind, unsound, a large suppurating wound of forehead; her constant talking, cries and groans aroused the sympathy of the entire institution. The large suppurating wound gradually healing in three months, leaving a pulsating cerebral hernia. Lower maxilla united very well and the wounded eye and lacerated ear healed, leaving but little scar. For nearly a year this poor unfortunate lived in this condition before there

came a sudden collapse and exhaustion released the sufferer.

1402 M Street, Northwest.

Dr. Wade Atkinson:

Dear Doctor,—Your request asking me for a short description of the brain of Mrs. A. G. D., as I found it at the time of my autopsy, is at hand. Time will not allow me to go fully into the case, but I mention the important evidences:

Externally 1' above right orbital ridge and $\frac{3}{4}$ ' to right of median I found an irregular shaped round depression, the skin dipping downwards as scar tissue, 1' below the contour of the skin. The size of this depression was $1\frac{1}{2}$ and $1\frac{1}{4}$ inches. Immediately below skin in depression dura was found markedly thickened. A small amount $3\frac{1}{2}$ of watery pus was found in this locality, but brain substance remarkably healthy and small cavity draining nearly through frontal sinus into nasal cavity. The right orbital plate was absent, brain pressing easily against eye-ball. No evidence at this time of any bone fragments or necrosis.

The pia mater was somewhat more adherent to cortex than usual. No effusia.

When the right occipital lobe was opened, near longitudinal fissure, my knife met a fibrous-like membrane, then opening into an abscess, which contained about one-half drachm of yellowish-green pus. There was a distinct pyogenic sac and the pus was confined. This cavity was about $\frac{3}{4}$ ' below cortex. About $\frac{1}{2}$ ' to the right and ant. to this sac was a similar one, about the same size and appearance. One-half to right and post. to first sac was a third, lying slightly nearer cortex of Hemisphen; the general appearance and size was the same; the pia mater, however, over this third sac presented the appearance of scar tissue, as if it might have been an old injury. None of these distinct abscess sacs communicated with the anterior wound in brain, but were all well defined and separate. The blood vessels, membranes and brain substance, except immediately around diseased areas, was in a remarkably healthy condition. Very sincerely,

LARKIN W. GLAZEBROOK.

2022 P Street, N. W.

"Be not wise in thy own conceit."

THE PHYSICIAN AND THE PUBLIC IN RELATION TO THE COMMON COMMUNICABLE DISEASES.*

By J. C. IRONS, M. D., Elkins, W. Va.

In treating this subject we are confronted, at the outset, by a difference of medical opinion as to the scope of what is meant by the term communicable. Some hold that a communicable disease is one that is reproduced in subjects not immunized by being or coming into such proximity to the infected as to be exposed to the exhalations, and thereby inhaling or imbibing the infection, be it germs or microbes or whatever it may be called. Others claim that a communicable disease is one that is propagated either by contagion or contact, and that to be placed in proximity or coming in contact with the diseased person or infected article or thing, the seeds of disease are implanted, while others hold to the broader and all comprehensive idea that communicable means a carrying or conveying disease from person, place or things to other persons, places or things.

We do not think it will be necessary for our purpose or serve the aim in view to enter into the technique of medical terms; hence we will accept the broadest meaning, believing that for public purposes it will best serve our requirements.

We do not desire to be too severe, but the general welfare compels us to believe that along the line of thought suggested by the topic under consideration, as a rule, the common practice of the day, borders on criminal neglect. Too often do we see the grossest neglect of even the commonest precautions in the care of the infected or the prevention of the spread of these diseases that entail suffering and death upon the ignorant, innocent and unprotected.

The true physician stands as a sentinel upon the walls surrounding our health and our homes, and he is untrue to himself, unfaithful to his trust and disloyal to the profession if he fails to ring out the alarm when the enemy is approaching, be the approach made in the open or under cover. It is only by "forewarning that the public can be forearmed" and thus be prepared to face a foe in the field of vision or lurking in obscurity. He occupies a position of grave responsibility, for into his hands are largely the safety of the community. He should

ever be on the alert, for as population becomes more dense and large cities spring up, the physician is daily finding himself in contact with legally constituted authorities, in the shape of registrars, health boards or officers, coroners, etc., and he is frequently summoned before courts of inquiry as to public health, as a supposed expert, and the result of these researches by our authorities will largely depend upon the position taken by the physician and the well-grounded opinions he may be able or willing to promulgate. It is frequently through these channels that public thought is directed to these matters most effectively.

It is true the physician's business is more particularly the care of the sick, with reference to the care of disease, or where that is beyond his power, as is unfortunately too frequently the case, to relieve suffering and secure temporary ease for his patient; he is, nevertheless, often called upon to answer questions as to the causes of disease and the best means of avoiding or destroying these causes, and upon his advice largely depends the safety of the country. The intelligent physician will readily see that while perhaps least appreciated, owing to the want of information by the public, and to the too often marvellous cures of quack nostrums and quack physicians, who lead the credulous to believe that by the use of magic cures no disease is dangerous, and need not, therefore, be avoided, still his advice as to the best means to avoid disease or limit its effects, is of much more value to humanity, prevents more suffering and saves more lives than all the medical formulas in the most popular and best compiled pharmacopœia. The more eminent the physician the more important are his services and the more extensive his influence will be. He not only serves to mould the thought of the community in which he may reside, but gradually that influence will percolate through his local environments and reach out through the surrounding country, State or even the nation and the whole civilized world. By his knowledge wise counsel is given, medical treaties are prepared, and through his influence beneficent legislation is enacted and influences set in action that tend to limit the frequency and force of contagious diseases.

Every physician is responsible for the position he takes and the advice he gives or withholds with regard to all public health matters. Be his course active or passive, he cannot shift

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the responsibility. It is questionable which is the more reprehensible, to unwittingly give incorrect advice or not to advise at all when danger threatens. By the former course a note of warning would be sounded, even though the path of safety were not pointed out, while in the latter the indifference would tend to convey the idea that no danger was near, and, therefore, no need of caution was necessary.

While the burden of responsibility rests upon the physician, in that to him is given the important duty of imparting correct information to the public, in his daily intercourse with his people, yet when the information is given the burden is, to some extent, shifted and the responsibility thence becomes mutual. When the physician has performed his whole duty then the people largely share his work, and the success of his teaching, "line upon line and precept upon precept," will largely depend upon the co-operation of the citizenship, backed up by and enforced by the legally constituted authorities, which authority would scarcely ever be necessary could the public be awakened to a full sense of the dangers and responsibilities existing in every case. These are stern and inexorable conditions that confront us, and, strive as we may, they will ever arise before us to give us anxious thought for action and difficult problems to solve. To no body of men does the oft repeated query, "Am I my brother's keeper?" come with more force or meaning than it does to the medical profession.

In view of these responsibilities that lie before us we seek to solve the problem by anxiously asking, What must we do? We are led to believe that our first duty is to search our own lives and see whether we have done our best at all times. Have we been faithful watchmen in guarding the community in which our duty lies? Have we been diligent in indoctrinating the best thought of well digested medical teaching and practical personal experience into the public mind, so that they may be able to detect danger and be prepared to ward off its approach? We are persuaded that too much indifference lies at our own door. We have not so carefully guarded the public as was our duty. What we most need in this day is a more systematic and thorough course of managing the common communicable diseases. To succeed in this we must impress upon public thought the absolute importance of cleanliness, isolation, immunization where practicable and

sterilization. Many of the most common diseases so prevalent and often so fatal among children, may be almost eradicated if we could only get the physician to require the patients to be strictly isolated. We have often seen whooping cough, measles and scarlet fever pervade a whole community, when if but the least care had been taken to isolate the first case the fearful spreading of the disease might have been prevented. True, the physician is not always responsible, owing to the fact that many exposures are made before the physician is called or the case diagnosed, and even the facts are often withheld by those most likely interested or affected. The most careful and painstaking investigation is always demanded when a community is invaded by these communicable diseases; and where facts are withheld from physician or health officer the severest punishment should be meted out to those responsible, not so much to punish the guilty, as to set an example for those who may be similarly situated or affected. The recent repeated outbreaks of small-pox throughout this and adjoining States is but an example of what a want of proper care may cause a community to suffer, either in person or purse, or both, when a systematized or sensible prevention is not attempted.

We need to be more careful in instructing the public in the rules of public safety. To do this it is absolutely necessary to get the profession away from self and selfishness, which seems too often to be the guiding influence, and let them see the duties of the hour; and having gained this vantage, have the public to share our confidence and aid them to a better understanding of the absolute necessity what a common humanity claims, thereby arousing a co-operative sympathy and action, which will inevitably result in a concerted and effective action along intelligent lines.

Where immunization is practicable the general good demands its application. We are glad that medical research has placed in our reach and given unquestionable proof of the efficacy of vaccine and anti-toxine. Often when danger is around us we may break its shackles or minimize his power and bring safety to those entrusted to our care by the proper use of these means.

Following closely upon isolation and immunization will come disinfection and sterilization. These should be taught in every case

where germs of disease are likely to be stored away or be carried in clothing or bedding to the unsuspecting. It is only by a careful and painstaking enforcement of the accepted rules of practice that great good will result to the public.

The common good demands the careful enactment of the wisest health laws, and upon the physician will devolve the duty to so impress its importance upon the people and through them upon their legislators, that from time to time such wholesome laws shall be made as will best serve the purpose. All this will require great vigilance, much thought, and will be accompanied by many bitter disappointments, and frequent failures; but by concerted action and perseverance we may soon see the clouds that now and then seem to envelop us disappear and the bright sunlight of success with healing on its wings hover over our homes and around our firesides.

Let every physician do his whole duty. Take a confiding public into his councils, awaken public thought and the beneficent result will soon and surely follow. Our responsibilities are great and we will be held accountable for any neglect of duty. We may not add to our bank account, nor acquire fame by teaching the homely doctrines of sanitation, immunization, isolation and protection, but will possess what is of greater value—a consciousness of having done our whole duty and enjoy that peace of conscience “void of offence toward God and man,” and by so doing “lay up treasure where moth nor rust doth not corrupt, and where thieves do not break through nor steal.”

Infantile Diarrhea.—Rapid treatment has to be resorted to. Modify the diet, suppress objectionable food, especially milk not properly modified and sterilized. Meanwhile keep the bowels thoroughly aseptic. Years of experience demonstrate the value of Tyree's antiseptic powder—a teaspoonful or less diluted in a pint of tepid water making an ideal washing for the intestine, used as an enema. The same powder properly diluted has proven eminently beneficial administered internally. This fact is amply demonstrated by physicians who have for years made clinical use of this powder.

DIAGNOSIS OF RENAL TUBERCULOSIS.*

By JOHN D. THOMAS, M. D., Washington, D. C.,

Assistant to Chair of Medicine and Pediatrics, Medical Department
University of Georgetown, Washington, D. C.

Tuberculosis in any of its various forms is of unfailing interest to the medical profession; and especially is this true at the present time, when the lay world is watching with an eager, yet half skeptical, eye the redoubled efforts of our profession to cope with, and master, this great scourge of the human race. When special international congresses are held to discuss this one disease, I may be pardoned for bringing to your consideration one phase of the subject, “the diagnosis of renal tuberculosis.”

The etiology of this special form of tuberculosis will only be considered so far as it may have a bearing on the diagnosis.

It is now generally admitted that infection of this organ can take place from tubercle bacilli eliminated through its excretory apparatus. Borrel injected tubercle bacilli into the carotid artery and obtained a primary renal tuberculosis immediately afterwards.

Infection can also occur through the lymphatic system, causing an interstitial invasion. By these means it may be infected from disease existing in more or less remote organs or parts of the body. Or it may occasionally be the *primary* seat of the invasion. Foulerton and Hillier, in the examination of the urine of eighteen cases of pulmonary tuberculosis, say that so far as can be generalized from so few cases 50 per cent. of those fairly advanced show tubercle bacilli which are virulent for guinea pigs, though their number is small, and the kidneys show only a slight tendency to become infected in the process of elimination.

Flick, in a recent article reciting the work of a new outdoor sanitarium for poor consumptives, says: “Systematic examinations of the urine for tubercle bacilli has revealed involvement of the kidneys in a surprisingly large percentage of cases admitted.”

As to what precautions he took to exclude smegma bacilli he does not say; and I think of he means by the expression “involvement of the kidneys” that the kidney structure was invaded, because of the presence of bacilli in the urine, the conclusion is hardly justifiable.

Trisch, quoted by Senn, says: “Even the recurrence of bacilli is not to be regarded as a

*Read at a meeting of the Medical and Surgical Society of the District of Columbia, December 18, 1902.

positive sign, since it has been demonstrated that" they may come from other infected organs.

So, from the most recent investigations it may be conceded that tubercle bacilli can be present in the urine of patients having a tuberculous infection elsewhere than in the kidney.

It is more than probable that any injury or trauma or pathologic condition of the kidney puts it in condition to be infected by any tubercle bacilli passing through it.

Several observers have recorded cases of renal tuberculosis following, in a more or less short period, hematuria from some injury.—Newmann.

Age is not a very great etiological factor. Childhood seems to be more affected, especially in the miliary form, and between the ages of 20 and 40, and *men* more frequently than women.

The *frequency* of renal tuberculosis as given by Roberts, quoted by Senn: "Out of 1,317 tubercular subjects examined in the Pathological Institute of Prague (out of a total of 6,000 bodies) tubercle in the kidney was found seventy-four times, 5.6 per cent. of tubercular cases."

Tubercular disease of the kidney may be *primary*—that is the first demonstrable point of attack of the bacilli. Or it may be *secondary* (1) to tubercular disease elsewhere in the body, as lungs, or (2) to the disease existing in near relation to the kidney, where the infection is carried by continuity or contiguity of the tissues, as bladder, testicle, or liver, intestines, mesenteric glands.

Diagnosis.—In approaching the question of diagnosis of this condition all of the most improved and latest scientific aids, together with an acute observation of symptoms and a well-balanced judgment, are necessary. To emphasize some of the difficulties to be met in making a diagnosis, let me quote a few lines from those who have given time and ripe labor to its study.

Senn says: "The symptoms of tuberculosis of the kidneys are insidious in their onset and ill defined in their clinical aspects. None of the symptoms are pathognomonic, and a probable or positive diagnosis can be made only by a careful study of the clinical history and by recourse to all diagnostic means, including a careful bacteriological examination of the urine."

Newmarket, in New York Medical Record for September last, says: "There is not one method or one significant clinical feature by

means of which a man can with ease and positiveness make a diagnosis for or against tuberculosis in all these (doubtful) cases."

Trisch, quoted by Senn, says: "The symptoms, exclusive of the presence of tubercle bacilli in the urine, are of very variable character and occurrence, and, therefore, never can be thoroughly relied upon for their diagnostic significance." And then he continues, as quoted above, "that even the recurrence of bacilli is not to be relied upon, as they may come from other infected organs."

One of the early symptoms recorded in some cases has been *hematuria*, and almost every case shows some character of hemorrhage, either in the early or late stages. In the late stages it may be that the involvement of the lower urinary tract has progressed to the stage of ulceration, and the hemorrhage be from that source.

Another comparatively early symptom is *frequent micturition at night*. This, by some, is held to be an important point in differential diagnosis. But Brown, in Boston Medical and Surgical Journal for May 30, 1901, is of the opinion from his observations of a number of cases that the symptom appears after the lower segment of the ureter has become involved, with an irritable state around its opening into the bladder.

Pain is not an early symptom. But often there is a dull ache in the region of one kidney or in the lumbar region of back on one side. Colic sometimes occurs. *Tenderness* over kidney often exists, and can sometimes be followed down the course of the ureter.

The presence of a *tumor* is evidence of some advance in the stage of the disease. The normal kidney in a normal individual cannot, as a rule, be felt, so that if the kidney is easily palpable any enlargement would be recognized at once.

Fever, as in all other tubercular cases, usually exists, with its characteristic slight rise in afternoon and fall in morning. If a mixed infection occurs later the fever would be more marked, and of the hectic character.

By far the most important means of diagnosis is an examination of the *urine*. Still the element of uncertainty is emphasized here, as in the other symptoms.

The use of the cystoscope to determine if the bladder is infected and to see the character of the urine discharge from each separate ureter is a most valuable aid in certain stages of the disease. A great many of the best clinicians

and operators express very strong objections to any instrumentation where it is possible to do without, as most serious exacerbations of symptoms and complications follow the use of instruments, pyelitis and rapid progress of an otherwise quiescent condition having occurred in many cases. But if surgical interference is to be considered, in the way of nephrectomy, etc., it becomes absolutely necessary to know if only one kidney, and *which* one, is affected. Then cystoscopy with *ureteral catheterization* is indicated and is a most helpful solution of the heretofore difficult problem of finding out if the other kidney exists and is healthy.

Polyuria is one of the early symptoms, followed in the later stages by diminution in quantity. *Albumen* is not a constant constituent of the urine in the early stages, but is more or less present when hematuria exists or destructive processes are going on in the kidney.

Tube casts are rarely present, and the absence of casts in a more or less chronic nephritic trouble is by many thought to be a characteristic of tubercular renal disease. The urine is usually *acid* in reaction (even with pus in it). Harrison (Twentieth Cent. Pract., p. 154, Vol. I.), says of this: "It is curious to notice how, even under these circumstances (urine charged with pus and disintegrating tissues), the urine retains an acid reaction."

Pus cells are found, and are very numerous, when the process has advanced very far.

The most interesting and diagnostic element found in the urine is the *tubercle bacillus*. And at the same time it is the most difficult to find; and from what was said in the first part of this paper, the mere finding of the tubercle bacillus must not be taken by itself alone to be pathognomonic of tubercular disease of the *kidney*. There are two methods of determining the presence of tubercle bacilli in the urine—by staining it in the dried sediment and by inoculation of some animal with the sediment. The simple staining method has the following drawbacks:

1. The bacilli are, as a rule, extremely few and require long searching of a well stained specimen.

2. The smegma bacillus, which has almost the same staining characteristics as the tubercle bacillus, can hardly be certainly excluded, even by catheterization. (Soudern's case.)

The points of difference are the following:

Tubercle bacilli cells usually appear in

groups, often in S-shape, or end to end and in parallel lines. The tubercle bacilli cells may have so-called vascoles in them, and they hold the stain better than smegma, so that strong alcohol or acid decolorizing agents will decolorize the smegma and leave the tubercle bacilli cells stained with the fuchsin. But those who have had the greatest experience in trying to differentiate the two organisms by tinctorial methods hold that it is very difficult and sometimes impossible to make an absolute differentiation. Hence the more certain method of *inoculation* of an animal with the centrifugated sediment of a suspicious urine is resorted to.

This test is usually considered positive evidence of the presence or absence of the tubercle bacillus.

To sum up, then, the diagnostic points of renal tuberculosis, we have:

- 1st. The presence of tubercular disease elsewhere in the body.

- 2d. A previous trauma of the kidney.

- 3d. Hematuria, usually early.

- 4th. Frequent micturition at night.

- 5th. Polyuria, followed by a diminution in amount.

- 6th. Pain and tenderness in kidney region, with sometimes colic.

- 7th. A tumor on affected side.

- 8th. The characteristic fever of tubercular infection.

- 9th. Examination of the urine shows—

- (1) Increased amount.

- (2) Albumen absent, early, and may be present in small amount later.

- (3) Tube casts as a rule absent.

- (4) Acid reaction.

- (5) The presence of pus.

- (6) The presence of tubercle bacilli shown by tinctorial and inoculation methods.

Case.—Mrs. X. Age, about 35; white; married; no family history of interest.

Previous History.—Has always been frail physically, though with abundance of energy and will power. Has the general appearance of the lack of full development of some organs. Has been under my care for five or six years, and I have always found her more or less nervous, unable to take most drugs, and with a response to those she would take opposite to that usually seen with the drug. A very irritable stomach, easily nauseated. Never a large eater, sometimes extreme aversion to eating; sometimes constipated, but more often a diarrhoea.

Three years ago, while away from home, had a quite severe diarrhœa and passed some mucus. Never any blood so far as able to find out. Suffered with indigestion often. Menses always more or less painful in recent years, and very scant; often, especially within the last two years, a tendency to delay in their appearance, with several times an entire non-appearance for a month. They would reappear with treatment with apiol and continue for some months more or less regular, but often with only a slight discoloration of the napkin. The respiratory system has always been normal, with the exception of now and then a slight bronchitis, and several times a catarrhal tonsilitis. I have examined her lungs *thoroughly* a number of times with no evidence whatever of any diseased condition. Heart has always been normal. But the circulation, especially peripheral, has been deficient since she first came under my care. I have never known her to perspire but once, which occurred during the present month, even when given diaphoretics and other therapeutic measures to cause sweating.

Last winter and the summer before she suffered a great deal with intense general *pruritus*, and also some this summer and fall. Always has a splendid color in cheeks.

About 11 or 12 years ago she had acute suppression of urine. But does not remember if she passed blood. Nine years ago had another attack of acute suppression of urine, and then passed blood for three or four days following, and about two years ago she had very scanty flow of urine following a small dose of belladonna, which I gave in a cough mixture.

For two years has had pain more or less in region of right kidney. Very tender in whole region, up to and including stomach, upon attempt to palpate. The pain would come on more severe at night after going to sleep, and wake her, and she would then have to urinate with disappearance of pain following emptying of bladder. Would have to get up to urinate three or four times during the night. Once or twice had quite severe attacks of this pain, involving right kidney region. But I could never examine the part thoroughly because of the extreme tenderness to palpation, yet I thought I could get hold of the right kidney, and found it somewhat **enlarged**.

On March 13, 1900, an examination of the urine showed it alk. sp. gr. 1012, no albumin; no sugar; phosphates markedly diminished,

chloride normal, urea 0.015 grams per c. c. Microscopical examination: Epithelium and bacilli just like tubercle bacilli stained with eosin and methylene blue, but the urine being alk., and no pus, blood, or albumin being present, it was thought they might be smegma bacilli, as the urine was not catheterized.

On January 5th, before this, there was no albumin present, urine markedly acid, sp. gr. 1015., urea 0.022, grms. per c. c., phosphates diminished.

Microscopic Examination—Negative (but no staining was done for tuberculosis). On February 23, 1902, urine showed no albumen, sp. gr. 1013., phosphates diminished.

Last summer while away at a northern resort she began to pass quite large amounts of urine and urinated frequently. The physician told her she passed three times as much as normal. This continued for a month or more, when she left there and on her way South stopped in Massachusetts, where she had quite a severe attack of neuralgia, headache, suppression of menses, nausea and severe pain in right side and suppression of urine.

But previous to this—in fact, all of the latter part of the summer—she had been failing in strength and energy, no appetite, very weak and fatigued by the slightest exertion. Diarrhœa added to the weakening influences. The physician who attended her at the summer resort, after having seen her three or four summers for four or five months each year, told her when she left this year that he did not know what the trouble was. And when I came home from a short trip this fall I found her waiting for me to tell her what was the trouble, and to do something for her.

I found her very weak, emaciated, unable to undergo the slightest exertion, all of her natural energy gone, despondent about her condition; no appetite, diarrhœa, nausea and extremely nervous, with continual pain in region of right kidney and pain in lumbar region of back. Once more I made a thorough physical examination of heart, lungs and abdomen. Heart and lungs normal, extreme tenderness in right kidney region and presence of tumor; some tenderness over stomach, slight palpation producing nausea.

Urine—Not catheterized. November 2, 1902, amount twenty-four hours, 10 or 12 ounces; color, light straw; sediment, slight flocculi, strings of mucous; reaction, slightly acid; sp.

gr., 1007.; phosphates, diminished; urea, 0.01 grms. per c. c.; albumen, none (heat and H. NO₃ tests); sugar, none; microscopic examination, some round epithelial cells, a few white cells. Upon sedimenting and staining with carbol-fuchsin and methylene blue, *bacilli* very much like tubercle bacilli found quite numerous and grouped in more or less *parallel* lines and *end to end*.

She began to improve slightly, nausea disappearing; pain in right side getting less, bowels became regular, diarrhoea checked; but was still so nervous and tired so easily that she could stand only the slightest exertion.

Strychnine sulph. grs. 1-100 was given t. i. d., but could continue only for a few days, as she became very nervous, I thought, from the drug.

November 13th another partial urinalysis was made, showing as follows:

Amount in twenty-four hours, 370 c. c.; specimen catheterized; color, light straw, sediment, very slight, flocculent; reaction, very slightly alkali; sp. gr., 1010; phosphates, very much diminished; chlorides, normal; urea, 0.0065 grms. per c. c.; albumen, none (heat and H. NO₃). No microscopic examination, but specimen sedimented for staining.

November 16th. Urinalysis as follows: Twenty-four hours, 350 c. c. (1-100 c. c. previous twenty-four hours); color, light straw, very cloudy; sediment, very slight; reaction, acid; sp. gr., 1013; diazo reaction, negative; albumen, none (heat and acid). Microscopic, centrifugated; numerous epithelial cells; squamous more numerous, with some flakes of squamous cells; some leucocytes; no casts.

The patient continued in about the same general condition, not improving to any marked degree, though suffering no pain, with the exception of a slight pain in region of left kidney one day, which did not last very long. Insomnia bothered her a good deal. During this time she was passing only between 300 and 500 c. c. of urine in each twenty-four hours, and the amount of urea was extremely small on some days.

November 26th, urinalysis showed amount, twenty-four hours, 300 c. c.; reaction, faintly acid; sp. gr., 1014; phosphates, diminished about half; urea, 0.0145 grms. per c. c.; albumen, none. Microscopic—Numerous squamous epithelial cells; many round cells; many columnar cells; very many leucocytes; a few hyaline casts; two long casts (very much like

cylindroids), with red blood cells on them; phosphate crystals just like tuberculosis; stained specimen on slide shows bacilli very numerous.

November 28th, 280 c. c. in twenty-four hours; urea, 0.013 grms. per c. c. Microscopic—Quite a few leucocytes, several hyaline and granular casts.

November 29th—Catheterized urine contained many large, round cells; many long columnar cells; many leucocytes; a good many hyaline casts and several blood casts. Staining showed no bacilli. And this was the result in several other catheterized specimens which were stained with carbol-fuchsin and Gabbot's methylene blue.

During all this time I was fearing uræmic symptoms, but none appeared, unless the nervousness and insomnia could be attributed to it. And I had often seen her in almost as nervous a condition. Her temperature has been ranging between 99° and 97° for several days, being subnormal morning and evening. Chart shows for a month a morning rise and evening fall—rise never above 99° and more often below normal.

November 25th.—Examination of the abdomen showed much less pain in right kidney region than formerly, but still quite tender, more so than left kidney. Right kidney was easily palpable, slipping up under the liver when caught between the two palpating hands. It seemed somewhat larger than a normal kidney and was more or less movable within moderate limits. Prolonged and thorough palpation of left side failed to reveal anything of the shape of a kidney. But once on deep palpation a small nodule about the size of a pigeon egg could be felt in the position the kidney should have occupied. The patient was very thin and the vertebral column could be easily palpated, also the free ends of the ribs, so that I believe if a normal sized left kidney had existed I could have felt it.

The pain and tenderness on right side extended down the course of the ureter and disappeared as you reached the brim of the pelvis. There was also, as formerly, much tenderness over the stomach, and a feeling of nausea was excited by much palpation.

Patient has improved somewhat in her general condition; but still subnormal amounts of urine in twenty-four hours and very small amount of urea.

X-ray photographs showed nothing definite

but a dark area on left side, which the physician taking the photographs thought was a left kidney.

November 8th the urine was catheterized into a sterile vessel and sedimented with a centrifugal machine, and 1 c. c. of the sediment was injected into the peritoneal cavity of a guinea pig; 1 c. c. of sediment was injected into the thigh of another guinea pig. A third guinea pig of the same lot was kept separate as a control.

December 15th the animal that was injected in the peritoneal cavity was killed. He had been perfectly normal and well after the first day following the injection. Upon inspection of the peritoneal cavity nothing abnormal was found; no enlarged glands, no adhesions or evidence of inflammation. None of the glands in the body were found enlarged, no evidence being given of any tubercular infection. The animal injected in the thigh has been perfectly well up to the present time, and shows no evidence of any infection.

This case shows the great difficulties encountered in making a diagnosis for or against renal tuberculosis. But from my study of the case I do not believe a diagnosis of renal tuberculosis can be made.

ARTERITIS IN TYPHOID FEVER.*

By W. T. THAYER, M. D., Baltimore, Md.

I want to say a few words to-night about a complication of typhoid fever which, though it has been recognized for a good many years, I think is very little known in this country, at least the attention of few practicing physicians has been directed to it. Early last summer in looking for a subject with regard to the complications of typhoid fever, I turned toward the vascular complications of the disease, because I thought I would like to look into the matter. As soon as I started to look up the statistics two or three instances of typhoid arteritis came to my attention, one right after the other.

I will begin by speaking of the several cases I have seen and of one which was called to my attention by a friend.

*Remarks made before the Baltimore Medical and Surgical Association, March 9, 1903, furnished by the Secretary, Dr. Eugene Lee Crutchfield, 1232 E. Preston Street.

The first case is one that has already been reported by Dr. Osler: A man, 22 years of age, perfectly healthy, who, on the eleventh day of an attack of typhoid fever, was suddenly seized with general convulsions. He had several in rapid succession, and they seemed to be a little more marked on the right side than on the left, but did not seem to begin in any one part more than another. There was nothing to localize the cause in any one part of the brain. With slight intermissions they lasted about ten hours, when the patient died in violent convulsions. An autopsy made on the following morning showed thrombosis of some of the branches of the left middle cerebral artery, particularly the parietal branches—the branches going toward the angular gyrus.

The second case is that of a young woman, aged 16, who was in the hospital last summer. On the fourteenth day of a very severe typhoid fever it was noticed that one leg was somewhat colder than the other. She had complained of no sudden pain, possibly because she had been delirious, but in searching for pulsation of the arteries they were not to be found. The foot was colder and paler than on the other side, and, in the course of several days, the foot began to show definite signs of dry gangrene, and in the course of time the line of demarcation was well defined. The question arose of whether it was feasible to operate or not, and it was decided to wait. She had a very rapid pulse throughout, but with heart sounds perfectly clear, and there was no evidence of any cardiac lesion. It is impossible to say whether the case was one of arterial thrombosis or embolism.

The third case is that of a boy of 13, who had a mild case of typhoid with a relapse, and on the fourteenth day during his relapse he complained of tenderness in the right inguinal region and in the area of Scarpa's triangle. There was slight tenderness along the course of the vessels, but nothing else could be made out. On the following day there was some tenderness along the inner side of the leg, and on examination a slight swelling could be distinguished over the vessels in Scarpa's triangle and following the course of the vessels; deep, not superficial. At the same time it was noticed that his left thigh was slightly swollen. The left foot and lower part of the leg were distinctly paler and much colder than on the other side. On going back to Scarpa's triangle pulsation could not be felt in the femoral artery. The

deep epigastric could be readily felt. On the following day the condition was just about the same, and on the third day pulsation in the arteries of the leg was better, and gradually, in the course of three or four weeks, pulsation entirely returned in the arteries of the foot. The patient made a good recovery. About a week after his first attack he had tenderness over the vessels in the popliteal space. The measurements in the left leg were a little bit fuller than in the right at the time he left the hospital.

The fourth case is that of a young man of 27, who, on the twentieth day of typhoid, complained of considerable pain in the elbow. The pain was quite marked and extended down the ulnar side of the arm and a little above the elbow. It was found on the evening of the first day that the pulsation of both arteries at the wrist was distinctly less than on the other side and that the hand on that side was colder. This case entirely cleared up in two or three days.

The fifth case—and the most marked case that I have seen—occurred in the practice of Dr. Steiner, of Hartford. It was a child, 8 years old, who, in the latter part of a typhoid fever began to complain one day of a little tenderness in his hand, which soon radiated up along the course of the brachial artery. Pulsation disappeared entirely at the wrist. There was tenderness and swelling over the brachial artery, which could be felt as a cord. The hand became at first pale and then blue and cold. The case was seen by Dr. Janeway, who thought that there would be gangrene of the arm, but in the course of two or three weeks the condition cleared up, the cord-like feeling in the course of the artery disappeared and the child recovered completely.

Now, leaving for a moment our first case of convulsions, this clinical picture is a pretty definite one—tenderness coming on toward the end of a typhoid fever along one of the large peripheral vessels, associated with tenderness and swelling, with diminution of pulsation in the artery below that point, and, eventually, either the development of dry gangrene or a slow abatement of these symptoms and a complete recovery. I find that there is considerable literature on this subject, mostly in the French, but a little in the German, with only a half dozen cases in this country. Of course, embolism of peripheral vessels in typhoid fever has been recognized from time immemorial, but cases which cannot apparently be called em-

bolism, coming on more or less gradually, with soreness, tenderness and pain at first, and then diminution of pulsation, have been noticed for some time. In 1863 Patre called attention to the fact that some of these cases were preceded by marked symptoms of redness and tenderness along the course of the vessels several days before obstruction became complete and gangrene set in. The cases at autopsy showed that an arteritis had preceded the thrombosis. In most cases the descriptions are not microscopic, though in several instances they are. There is a general infiltration of the walls of the vessels, such as to make it probable that a condition of arteritis preceded the development of the thrombus.

Going back now to our first case of convulsions, we have there, I think, very good pathological evidence that the arteritis was the first thing to occur in the case. I went back to this specimen and had sections of the brain made (it had been preserved in formaline) and found that the middle cerebral branches, which were clogged, showed a high degree of acute arteritis. The walls of the vessels were infiltrated, the coats at some points being unrecognizable, and this in connection with a thrombus that was very early, which had lasted at the most only ten hours. The changes, Dr. Welch thought, must surely have preceded the development of any thrombus in the vessel.

In the last twenty years these cases have been rather carefully studied in France, and particularly well described by Potan. It was after reading one of his descriptions that I went into the wards and saw this case of arteritis of the femoral. The case was most characteristic, beginning, as Potan says, with tenderness and pain along the course of the vessel, with probably a slight increase in pulsation to be noticed at first, followed by diminution or the disappearance of pulsation, with pain and coldness and pallor, perhaps even blueness, of the extremity, followed in several days by dry gangrene, or a gradual disappearance of all the symptoms. Now, how are we to account for the complete recovery of some of these cases? I think that is a difficult question to answer. It seems hardly possible to assume that there has been no very extensive thrombus, and the results after amputation in some cases show that the thickening of the walls of the vessels may be so great that it is quite possible that the mere thickening and oedema may be enough to

obliterate the pulse, so far as one's tactile sense goes, but in a good many instances there must be a parietal thrombus that more or less completely obliterates. The probability is, that most of these instances are due either to secondary infection, or the actual localization of the bacilli in the walls of the vessels. It has been shown that in a large proportion of cases either the typhoid bacilli or some secondary infectious agent can be cultivated from the walls of the vessels, or from the thrombus itself. The clinical symptoms connected with the development of the thrombus are suggestive of secondary infection.

I have been struck recently with the frequency with which the condition is associated with chills, and which chills are the very first symptom of thrombus, several days even before any other evidence. I have seen recently three cases in which inexplicable chills occurring towards the end have been explained by evidence of thrombus in a few days.

There is one other point, and that is in regard to the exact nature of the thrombus in some of these instances, not only in the arteries, but in the veins. The thrombus occurring in typhoid fever has been ascribed to a good many things—slowing of the circulation; etc.—but it is believed now to be due to changes in the walls of the vessels produced by a local infection. Now, this thrombus in the cerebral artery was shown to be not the ordinary colloid thrombus, but one apparently caused by the agglutination of red blood corpuscles just as they agglutinate in the typhoid tests. It had very little fibrin, and consisted almost entirely of red blood cells. In parts there could be seen the clinging together of the corpuscles and the disintegration of the cells, the greater part of the frame-work not being fibrin, but remnants of the agglutinated corpuscles. Dr. Flexner has recently observed the same condition in the walls of the intestines in typhoid fever. The whole appearance of such thrombi suggests that they are due to agglutinated red blood corpuscles and not directly to changes in the walls of the vessels. It is an extremely interesting question whether a considerable number of thrombi may not be of this agglutinative character. We know that the coagulability of the blood is diminished in typhoid fever, and yet we know that these thrombi in both arteries and veins occur.

I wanted to call attention particularly to the fact that in addition to the venous thrombus,

which is so commonly seen in typhoid fever, there is also an arterial thrombosis, apart from the cases of embolism that one sometimes sees, which is apparently associated with an active arteritis, and, that though it is, perhaps, not very common, it is rather more common than has been supposed.

MEDICAL EXPERT EVIDENCE.

By FRED. J. MAYER, M. D., Scott, La.,

Secretary Louisiana State Sanitary Association; Chairman Section Hygiene, Louisiana State Medical Society, 1901-'03; Chairman Section Quarantine Louisiana State Medical Society, 1894-'95, 1899; Chairman Section Medical Jurisprudence, Louisiana State Medical Society, 1902.

The average practitioner of medicine takes but little interest in medical jurisprudence—the science which applies the principles of medicine to the elucidation of all questions relating to its theory and practice which may arise in judiciary proceedings. These questions have been divided into five classes: (1) "Inquiries arising out of the relations of sex, as impotence and sterility, pregnancy and rape; (2) injuries inflicted on the living organism, as infanticide, wounds, poison, injuries and death from violence; (3) questions arising out of disqualifying diseases, as the different forms of mental alienation; (4) those arising out of deceptive practices, as feigned diseases; (5) questions of a miscellaneous nature, as age, identity, presumption of seniority and life assurance."

The limits of this paper warrant only a brief reference to the most important of these questions. To properly interpret them, the court, which, under our system of jurisprudence, is the sole judge of the law and the jury of the facts, requires an expert; and as any physician may be called upon at any moment to give "opinion evidence," or conclusions backed upon the theory and practice of his profession, as applied to hypothetical questions, or to facts which may or may not have been proven in the case in which he is called before the court, it is eminently mete and proper that he should understand the genesis and evolution of medical expert evidence, and the rules governing it, which have been laid down for his guidance to prevent him from straying into the paths of irrelevancy and theoretical speculation, or of encroaching on the prerogatives of court or jury, or of the constitutional rights of litigants.

What, then, is meant by an expert in medico-legal parlance? Lawson defines an expert as "a person having special knowledge and skill in the particular calling to which the inquiry relates." Justice Woodward, of New York, amplifies this definition and says: "An expert is a specialist, the value of whose evidence given in the form of opinion is proportioned to his character, to his reputation for honesty in the community and to his standing in his specialty or profession."

Quoting Jones (3), he says: "If the non-professional witness must, on grounds of necessity, be sometimes allowed to state inferences which irresistibly rise in his mind from these minute facts, which he cannot detail, there are still stronger reasons for receiving, under proper limitations, the opinions of those skilled in matters of trade or science."

While the court instructs juries as to the value of expert evidence, and while the latter may entirely disregard it, if it does not harmonize with their convictions of truth, yet it frequently happens that their minds are insensibly influenced by the expert testimony when skilfully arrayed and driven home by eloquent and astute counsel.

This, coupled with the fact that an expert witness is not punishable for perjury, even though he may have wilfully lied and pocketed the price of his perjury, has, in a great measure, thrown discredit on such testimony, but hardly warrants the severe criticism of Jones (3) that "it is of the very lowest order and the most unsatisfactory character * * * and should be received with great caution by the jury."

When received under the rules of admissibility, in view of the high character and intelligence of the *ethical* medical men of every community of the civilized world, such evidence is of the highest importance in every case at law involving medical knowledge, and should always receive the credence it deserves. Of course, there are serious objections to the system as practiced in this country, where the medical expert is supposed, and expected to be, a bitter partisan; and the testimony of *unethical* medical men, who, in all their professional relations, daily prostitute their profession to the lust of avarice and the sordid greed of gain, should carry but little weight, and fully warrants the criticism of Justice Rumsey (2) levelled at an expert, that "the sole difference between him and an advocate being, that he makes his argument under oath, and that he endeavors to

add the weight of the oath to the opinion of the advocate."

But let us briefly review the genesis and evolution of medical expert testimony:

Some writers hold that in the ancient Greek and Roman jurisprudence questions involving the principles of medicine were passed upon by experts, particularly by those who ministered to a "mind disease." This is a mere inference drawn from the fact, that the insane were considered irresponsible, and after judicial investigation consigned to curators, for there is nothing in the Greek and Roman law, nor in the writings of its famous codifiers and ancient commentators, like Nepian and Tribonian, to warrant the assumption. True, in the Greek jurisprudence, legitimacy was a factor, and in the jurisprudence code are to be found many traces of medico-legal relevancy, but all medical questions were settled by the court, on the authority of Hippocrates, and not by living experts (4a). When Justinian reformed the Roman jurisprudence he selected Tribonian and nine associates to revise the ordinances of the Gregorian, Hermogenian and Theodosian Codes.

Gibbon (5) says of Tribonian: "His genius, like that of Bacon, embraced, as his own, all the business and knowledge of the age"; and there is no doubt that if expert evidence was ever used in their criminal procedure Tribonian would have mentioned it in his voluminous writings. On the other hand, we are fully justified in believing that torture was relied upon to obtain evidence in the Roman jurisprudence, both civil and criminal—in the former on slaves, freedmen or "infamous" persons, like gladiators, or in inheritance cases, and in criminal practice, on any one accused of treason, sorcery or on wives for husband poisoning. The insane were, doubtless, no exception to the rule, until, of course, the evidences of *non compos mentis* were so plain that even a hardened layman could read and shrink from the infliction of further torture, through superstitious fear of the wrath of the gods.

Whatever conditions and imperfect knowledge may have characterized the expert evidence of the past, it was a vast improvement on "trial by ordeal" that obtained in England up to the sixteenth century, when the accused, if unable to produce "compurgators" or competent witnesses of their innocence, were subjected to the "trial by ordeal" (4b, 4d)—by fire or water, where courage or endurance were the sole tests of

truth, or in the "law of wagers"; (4c) or in "trial by duel"; (4d) or as in mediæval Europe, when the accused (4e) were tortured into confessions of guilt, both by the civil and ecclesiastical power; by the latter for heresy or Judaism and for usury. At times it was practiced with such vigor and cruelty that the civil power stepped in—as in the ordinance of Philipebel, 1302, ordering the inquisition to confine itself within the law. While torture was never recognized by the common law of England, it was, nevertheless, practiced, and at times with as great severity, and as often as on the Continent. Hallam tells us that "The rack seldom stood idle in the Tower during the latter part of Elizabeth's reign." (3a). The "accusatorial" system of English jurisprudence was, however, in theory opposed to the "inquisitorial" systems in vogue on the Continent; in fact, section 29 of Magna Charta guaranteed "that no free man should be destroyed in any way, unless by legal judgment of his equals or by the law of the land," and Coke declared this included immunity from torture. The common law, however (3b), recognized the "*peine forte et dure*"—a form of torture used as late as 1726. Other forms, such as throwing reputed witches into the water, to see if they would sink or swim; drawing their blood or sticking pins into them to find the insensible spot, were not obsolete until late in the eighteenth century. It is a significant fact that in the Code of Khammurabi, who reigned in Babylon about 2200 B. C.—the most ancient code in existence, from which the Mosaic Code drew its inspiration—the ordeal by water is thus described: "If a man has placed an enchantment upon a man and has not justified himself, he, upon whom the enchantment is placed, to the holy river (Euphrates) shall go; into the holy river he shall plunge. If the holy river holds (drowns) him he who enchanted him shall take his house. If, on the contrary, the man is safe, and thus is innocent, the wizard loses his life and his house."

The unfaithful or extravagant wife, or the wine seller who sold liquor too cheap, was subjected to the same ordeal. This remarkable code of laws, far older than Khammurabi's reign, was found inscribed on a pillar of black diorite in 3,000 lines, divided into forty-nine columns. It was exhumed by M. de Morgan at Sousa in the acropolis mound in 1901-1902, and translated by Fr. von Schiel, the assyriologist (3c). Even with us, in despite of the con-

stitutional inhibition against cruel and unusual punishments, the torture was inflicted frequently during the civil war, frequently in the Philippines, as in the "water cure." It seems strange that the human mind could become so perverted as to hold the erroneous belief that truth could only be elicited by torture, for, as Seneca said, "it forces even the innocent to lie"; and Nepian asserted: "It is untrustworthy, perilous and deceptive," while Beccaris, the great Italian law reformer, after an exhaustive study of the question, concluded: "It is absurd to make pain a test of truth, as though truth resided in the muscles and fibres of a wretch under torture"; and yet in France it was not abolished until the reign of Louis XVI. (4f). The famous jurist, LePage, who turned the brightest page in French jurisprudence, had vainly to remove this stain from the judicial ermine, but owing to the opposition of his contereers he was unable to do so for a long time. It required a cruel, but heroic, expedient and moral courage that rose to the point of sublimity equal to that of the Roman judge who sentenced his own sons to death to convince the King of the unreliability of confessions of guilt extorted by torture. It appears that LePage's foster sister, a beautiful and virtuous maiden, was accused of the theft of a valuable heirloom belonging to the judge, which was found concealed in her trunk, and under the excruciating agony of the torture applied in the presence of her brother, who refused to recuse himself, she confessed the crime as the thumb-screws sank into her delicate flesh, with a broken-hearted, reproachful look at the judge, who stood near, pale and unmovable as a marble statue, and with a cry of anguish the poor, frail sufferer sank into a merciful insensibility. LePage immediately informed the King of the theft and her confession of guilt, and upon Louis's replying that she must pay the penalty, to the astonishment of his Majesty and all the court, LePage declared that the theft was an invention of his own to prove to France, by the sacrifice of the one he loved best on earth, that torture, far from proving anything, forced the innocent victim to tell an untruth, the King, deeply moved, replied: "From this hour, let torture no longer disgrace the laws of France." It exists there still, in a modified form, since the accused may be confined without the benefit of bail, and by solitary confinement and verbal torture, a confession extorted.

In England the practice of calling in experts

in medicine before the courts had its origin in the common law practice (4x) of calling in experts in any science or art to explain technical phrases and terms; and from this evolved the practice of permitting litigants to introduce expert testimony. Woodward, in his able resume (2), thinks: Medical experts were the first called in legal cases, and quotes from a "volume of ancient and forgotten lore" that in 1353 the ablest surgeons in London were called in a case as experts, not on behalf of complainant nor defendant, "but to inform the King, the State," whether certain wounds inflicted "constitute Mayhem," the prisoner being subject to attainder if found guilty as charged.

A tremendous impetus was given to forensic medicine by the publication of the Caroline Code by the Emperor, Charles V. of Germany, in 1553, which provided for the taking of medical expert testimony in cases of death through criminal agencies (4g.)

In England, even in the seventeenth century, when the practice of calling in experts had been established in all rape cases, or applications for postponement of death sentence on account of pregnancy, or for annulment of marriage contract on account of physical inability to consummate it, or questions of a kindred nature were left to juries of matrons on a writ *de "ventre inspiciendo,"* who reported their findings to the court (4h).

Solomon Smithers (6) in his diary, relates a trial before a jury of matrons that occurred in New York in 1789. The defendant, a puny runt, called Meeker, evidently did not belie his name, for a meeker man never faced a jury. Nevertheless, he was accused of kidnapping "by force of arms and with illegal and criminal intent," one Jessie Angel, a spare, muscular, angular, unprepossessing maiden all forlorn, and of an age that would have warranted the attention of an archæologist; when the plaintiff expressed the belief that the prisoner had intended to drag her to church, to marry her by force, one of the fair jurors remarked, as a titter ran down the line, "Had he made such a proposal a regiment of horse could not have kept her from the church"; and the forewoman, after an extremely noisy and heated deliberation, or rather abuse of plaintiff, brought in the following verdict: "We have found that the prisoner is entirely innocent; that the creature who is on the stand (plaintiff) is not capable of telling the truth; that she has persecuted a poor, in-

nocent man, and should, therefore, be punished to the fullest extent of the law for perjury." Here the Chief Justice intervened and stemmed the torrent of abuse about to break out afresh against the fallen angel.

Among the many curiosities of medico-legal literature quoted in most of the text-books I cannot refrain from quoting the following (7): "In the trial for the murder of Jane Norkott, 1628, there is a curious instance of the disinterment of a body for a second inquest thirty days after the first inquest was held. At the first inquest the Coroner's jury rendered a verdict of suicide. It was shown upon the trial that when the body of Jane Norkott was disinterred for the second inquest one of the persons accused of her murder touched the dead body, whereupon the brow of the dead, which before was of a livid or carrion color, began to have a dew or gentle sweat arise on it, which increased by degrees until the sweat ran down in drops on the face, the brow turned to a lively or flesh color and the deceased opened one of her eyes and shut it again, and this opening the eye was done three several times. She likewise thrust out the ring or marriage finger three times and pulled it in again, and the finger dropped blood on the grave."

In the (8) Spencer Couper case, early in the eighteenth century, the medical experts wrangled over the proposition that "it is contrary to nature that any person that drown themselves should float upon the water. We have sufficient evidence that it is a thing that never was; if persons come alive into the water, then they sink; if dead, then they swim." Experts in this case held that water is always found in the stomachs of the drowned, and that its absence was proof positive against drowning. In the case of Alsop vs. Bowbiet (2) the court based its opinion on the evidence of two eminent experts, who declared "that the said Elizabeth (Andrews) might well be the daughter of the said Edmund," although born forty weeks or more after the death of the said Edmund.

At the trial of two poor widows (9) in 1665 for witchcraft before Sir Mathew Hale, Thomas Browne (9½), the famous author of "Relegio Medeci" and "Pseudoscia Epidemica," "or enquiries into vulgar and common errors," gave the following expert medical testimony: "There was also Dr. Brown, of Norwich, a person of great knowledge, who, after this evidence given, and upon view of the three persons in court, was desired to give his opinion, what he did con-

ceive of them, and he was clearly of opinion that the persons were bewitched, and said that in Denmark there had been lately a great discovery of witches, who used the same way of afflicting persons by conveying pins into them, and his opinion was that the devil in such cases did work upon the bodies of men and women. The judge and all the court were fully satisfied with the verdict, and thereupon gave judgment against the witches, that they should be hanged, and they were executed on Monday, the 17th of March, following, but they confessed nothing."

"Angels and ministers of grace defend us!" What a ghastly commentary on the ignorance of the age "that they confessed nothing." This Browne, whose testimony convicted them, was, perhaps, the most remarkable man of the age, whose mind was a "psychological curiosity."

(Continued in the next issue.)

Analyses, Selections, Etc.

Hydrozone in Surgery.

Dr. F. E. Burgevin, Spiro, Ind. Ter., writes to the *Surgical Clinic*, March 1903: Here at Spiro we do not possess the facilities enjoyed by Chicago surgeons. But except a few victims of railroad accidents shipped to the hospital at Kansas City, he has not sent away many surgical cases. While we cannot show as brilliant results as Senn, Ochsner or Morris, we "get there just the same." He has not lost any of his surgical cases. To illustrate how we do our surgical work here where we have no hospital resources to fall back upon and are not overburdened with instruments or appliances:

Mrs. T., aged 29, mother of a child 4 years old, had for weeks been under the care of a doctor who diagnosed appendicitis. I found a large tumor in the right hypochondrium, eighteen inches in circumference, reaching from the upper edge of the liver to within an inch of McBurney's point; firm, symmetrical, tender on pressure, no discoloration or fluctuation; considerable pain, not entirely relieved by opiates; temperature range from 102° to 103.5°; pulse 100 to 112; face flushed and anxious; history of chills and fever, with gradual onset of present symptoms complex.

Diagnosis by exclusion, *abscess of liver*. She grew steadily worse, and consented to operation. Under chloroform, exploratory incision was made the full length of the tumor, about five inches, dissecting down to the abscess cavity, through superimposed tissues, feeling our way, so to speak. The abscess originated in the superior lobe of the liver, and was pretty well walled off from the peritoneal cavity. We evacuated about a quart of greenish pus; then attaching a small nozzle to a 2-quart fountain syringe we scoured out that cavity, first, with a gallon of plain hot water, then with a hot solution of hydrozone, which was continued until foaming ceased. The cavity was then packed with iodoform gauze, the wound brought together with catgut, leaving an inch open at the lower end for drainage; the edges cleaned with pure hydrozone; then dusted thickly with boric acid. Gauze and a bandage completed the dressing. The alarming symptoms were met with hypodermics of glonoin and strychnine. Calcium sulphide was given freely from the beginning. Gauze removed on third day; repeated washing with hot solution of hydrozone and dressed as before. Not a drop of pus was seen after that, and healing was rapid. She had no more pain or fever, and had an uneventful recovery.

Boy jumped off moving train, was thrown against a side-track, cutting a deep gash over right eye. I found him an hour later comatose, pupils contracted, insensible to light, pulse thready and fluttering, considerable hemorrhage. Strychnine and glonoin brought about reaction; wound was carefully cleansed according to usual method with hydrozone, stitched together and dusted over with iodophyll. Reaction met by cold hood, aconitine and eliminants. The boy was soon well.

These cases show how we country practitioners handle emergency cases.

Book Notices.

Transactions of the American Roentgen Ray Society. Third Annual Meeting, December 10-11, 1902. Paper. 8vo. Pp. 178. Secretary, Dr. James B. Bullitt, Louisville, Ky.

Of the over 225 members only about 15 are from the South, including Washington city, West Virginia, Kentucky; etc., as the northern

boundary of the South, and yet hundreds of Southern doctors are engaged in X-ray work. Dr. Arthur W. Goodspeed, Philadelphia, is president. Every one of the 14 papers in this volume, including the ex-president's address—Dr. G. P. Girdwood, Montreal, Canada—is a good one, discussing or describing methods of every-day importance to the doctor. The papers are generally illustrated by skiagraphs.

System of Physiologic Therapeutics. Edited by SOLOMON SOLIS COHEN, A. M., M. D., Senior Assistant Professor of Clinical Medicine in Jefferson Medical College of Philadelphia, etc. *Volume X. Pneumotherapy, including Aerotherapy, and Inhalation Methods and Therapy.* By Dr. PAUL LOUIS TISSIER, Chief of Clinic in Faculty of Medicine of University of Paris. *Illustrated.* Philadelphia: P. Blakiston's Son & Co. 1903.

This *system* includes a practical exposition of the methods, other than drug giving, useful for the prevention of disease, and in the treatment of the sick, and every volume is a treasury of valuable information. Part I, on *Aerotherapy*, treats of air as a therapeutic agent, with descriptions of pneumatometry and spirometry; the use of air modified in composition and temperature; physiologic and pathologic effects of compressed air bath; absolute pressure method—the pneumatic chamber; effects and uses of rarified air; differential pressure methods; physiological effects and therapeutic uses of differential pressure methods; general and respiratory gymnastics; mechanical pressure methods. Part II is on *Inhalation Methods and Therapy*, and includes chapters on inhalation of gases; inhalation of fumes and vapors—apparatus and methods; medicaments suited for use as vapors; atomization (pulverization and nebulization) of liquids; inhalation of mineral waters at their source; inhalation and insufflation of powders. Index.

Manual of Diseases of the Eye. By CLARENCE A. VEASEY, A. M., M. D., Demonstrator of Ophthalmology in Jefferson Medical College, Philadelphia, etc. *Illustrated with 194 Engravings and 10 Colored Plates.* Lea Brothers & Co., Philadelphia and New York. 1903. Cloth. Small 8vo. Pp. 412.

While this book, intended for medical students and practitioners, contains very little that is new, it yet teaches in a sort of clinical way—the illustrations being profuse and the descrip-

tions of disease and operations clear, and the reading easy and attractive. It would well serve the purposes of a lecture room text-book. Nearly all the diseases usually named in the larger treatises are described, and stress is laid in most chapters on matters of diagnosis and advice as to the best methods to adopt in treatment. It is a good book, and will serve well in the library of the general practitioner for reference, and as a practical guide book for the specialist. A full index is appended.

Essentials of Modern Materia Medica and Therapeutics. By JOHN WILLIAM FYFE, M. D., Formerly Professor of Specific Therapeutics in Eclectic Medical College of city of New York. *With a Complete Formulary,* Compiled by GEORGE W. BOSKOWITZ, A. M., M. D., Dean of the Eclectic Medical College of city of New York. Cincinnati: Scudder Brothers Co. 1903. Cloth. 12mo. Pp. 344. \$2 net.

The doctrine of this book, in keeping with the Eclectic School of teaching of to-day, is that "in the treatment of diseased conditions, the physician should *always be guided in his selection of remedies by the symptoms*—disease expressions—and if a remedy is clearly indicated by a symptom, or group of symptoms, that remedy should be employed, regardless of the name of the disease being treated." While this doctrine seems a little too radical to us of the regular school of practice, still very much can be learned from such therapeutic works as this. Oftentimes we are forced to treat the symptom or group of symptoms, and this book—synoptical though it be in the description of drugs and their "indications"—will serve as an excellent aid under such circumstances. The *Formulary* contains a number of specific eclectic prescriptions—some of which are very generally adopted. It is a book that will do good if properly used.

Editorial.

Advice to Recent Graduates in Medicine.

The *Outlook*, June 27th, says: "If your patients were all reasonable men and women, your task would be easy; but they are not. Even in their best estate, they are not all reasonable men

and women; and you will have to deal with them when they are not in their best estate, but are morbid. You will have to deal with patients who throw your medicine out of the window, and still expect to cure them; in one house, with a mother busy with other things and careless of the sick child; in another house, with a mother whose weak and tearful sympathy does much to negative the influence of your presence and the effects of your medicines. It is not enough for you to know anatomy and physiology and therapeutics; not enough for you to know what your medical school has told you; you must know men and women—their physical constitutions, their mental and moral constitutions. You must understand—their life, their narrowness, their prejudices; their unreasonableness. You must see into them, that you may minister to them."

A High Grade Private Insane Asylum

Is about to be established by Dr. P. B. Baringer, late chairman of the faculty of the University of Virginia, and others, near Charlottesville, Va. A beautiful old homestead, with the most glorious view in the State, has been purchased and is being fitted up for the purpose indicated, with new plumbing, hot and cold water, gas, and the mountain water shed has been bought. Such enterprises in the South have not heretofore been a success, generally speaking, because of places not suitable or doctors not competent. But with the eminent ability of those in charge and the choicest selection of place, and the perfection of equipments, etc., we have a right to expect that this venture will prove to be the supply of a long felt want, and that it will be well sustained by the profession. As soon as ready, further announcement will be made.

St. Andrew's Home, Lynchburg, Va.

This private hospital of Drs. Terrell and Lile has been unable to accommodate all applicants for the past six months. Hence the institute will be closed August 15th for the purpose of making changes, which will consist chiefly in the addition of ten rooms. Having all materials on the grounds ready for rapid work, it is expected that the institution will be open for the reception of patients on or about September 1st. St. Andrew's Home has long been known because of the excellent work and great good done by the doctors who have charge

of it, and we congratulate them on their success, which is so great as to compel the addition of so many rooms to their already well equipped hospital.

The Case of Goitre

Reported by W. S. Cline in issue for July 10th, it is claimed by the author of the report, had perfect menstrual functions. So that Dr. Cline does not think the editorial note appended to the report fits the case. One uncle had goitre for 84 years; his grand-parents had goitre for sixty-five and seventy years. These facts "point strongly to a hereditary taint." With such facts before us, coupled with the fact that on June 1st the patient, with a goitre the size of an orange, began taking Parke, Davis & Co.'s 5 grain capsules of thyroids, and by June 22d, not a vestige of the swelling remained, make the case one of the most remarkable on record.

Dr. John B. Murphy and "Christian Hospital"—Correction.

We are glad one of our correspondents called our attention to a "Correspondence" in the *Journal of the American Medical Association*, June 6, 1903 (which copy failed to reach our office), containing a disclaimer for Dr. Murphy of any authority for the slanderous use of his name in connection with the quackery spoken of in our editorial comment in our July 10th issue. The "Correspondence" referred to shows that Probert, one of the "corporation" which so slanderously used the name of Dr. Murphy, has served a term in the Wisconsin penitentiary; Granville, another of the "corporation" was arrested for bigamy, having five wives. It seems that some time ago they made an unwarranted use of the name of Dr. N. Senn. Dr. Murphy has secured an injunction in the Supreme Court of Cook county, Ill., prohibiting the use of his name by the "Christian Hospital," or by the officers thereof. Thus Dr. Murphy is thoroughly exonerated. Our editorial was based on the fact that the copy of the *Journal* for June 6th has never been received by us, and none of those who had received that number seemed aware of the disclaimer. It is needless to add that we rejoiced in seeing the letter spoken of, and that we avail ourselves of the earliest opportunity possible to correct the error which our editorial made.

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Original Communications.

THE DIAGNOSIS OF SMALL-POX.*

By LLEWELLYN ELIOT, A. M., M. D., Washington, D. C.,
Physician in charge Small-Pox Hospital, Washington, D. C.

Small-pox, ranking as it does as one of the most contagious and most infectious of the exanthematous diseases, is, at the same time, the easiest prevented. It is a disease which causes untold financial losses to a community where proper health measures are neglected, or where ignorance of or prejudices against preventive measures prevail.

Notwithstanding the fact that small-pox is a loathsome disease, giving at times evidences of the most profound septic absorption, the mortality rate is not excessive, relatively speaking. The diagnosis of small-pox in the early stages, before the disease has asserted itself in characteristic phases, will oftentimes puzzle the most experienced; the same difficulties will frequently occur in more advanced stages, leaving us in doubt, uncertainty and indecision. On the other hand, cases will present where it would be almost a matter of impossibility for the merest tyro in medicine to make a mistake or to even hesitate in the diagnosis.

A diagnosis in cases of small-pox is reached by a study of the symptoms, the exposure to infection, a review of the case history, by exclusion or by intuition.

The diseases which cause error or hesitation in a comparative diagnosis in the earliest stages are, intermittent, remittent or typhoid fevers, meningitis, pneumonia, la grippe; later, measles, rotheln, scarlatina, erythema papulosum, lichen, copaiiba eruption; later still, eczema pustulosum, impetigo contagiosa, syphilis, erythema vesiculosum, measles, varicella, acne,

herpes zoster, drug eruptions—viz., potassium iodidum, potassium bromidum and vaccinia.

In order to intelligently consider *differential diagnosis*, it will first be necessary to briefly give the *symptoms of small-pox*, without regard to the variety, whether it be modificata, discreta, semi-confluens, confluens or hemorrhagica.

After the lapse of a period varying from five to twenty-five days from exposure to the infection of small-pox, the individual will complain of a feeling of chilliness or will experience a chill, with pains over the entire body, a soreness of the muscles; this chilliness may be continuous or the chill may be repeated; now comes the headache, frontal or occipital; fever generally to a high degree; pain in the back—usually in the lumbar region, sometimes between the shoulders; pain in the abdomen or pain in the chest; vomiting or nausea may occur, as well as restlessness, anorexia, constipation, bad taste, offensive breath, inability to sleep. This complex of symptoms will continue for forty-eight to seventy-two hours.

What is the *diagnosis*? Fever, la grippe, meningitis, pneumonia? Why, it is all supposition or guess work. This state of affairs does not last long, however, for on the morning of the third or the fourth day an eruption appears, first, as small red points more or less elevated, papular with a degree of hardness. The papules appear first on the forehead along the hair lines, or upon the wrists, then on the chest, face and arms, to finally spread over the entire surface of the body. This, now, brings measles and erythema to mind, as well as varicella and variola. The papules become vesicles, the fever lessens, a feeling of comfort sets in, the vesicles become pustules, the pustules become scabs and fall off, leaving scars, depressed to a greater or lesser extent. With this last clinical record, a diagnosis is comparatively easy, but not always so, for impetigo, syphilis and erythema do the same thing.

*Read at a meeting of the Medical and Surgical Society of the District of Columbia, May 28, 1903.

A categorical analysis of symptoms will be of service here:

Chill or chilliness are present in intermittent, remittent, typhoid and scarlet fevers, pneumonia, meningitis, varicella, measles, variola, diphtheria, la grippe.

Headache occurs in intermittent, remittent, typhoid and scarlet fever, measles, la grippe, syphilis, varicella, torpid liver, constipation, variola, diphtheria.

Vomiting occurs in malarial fevers, scarlatina, indigestion, biliousness, variola, constipation, obstruction of the bowel, diphtheria.

Abdominal pains occur in constipation, obstruction of the bowel, accumulation of gas, variola, indigestion, syphilis, pleurisy.

Thoracic pains occur in pleurisy, pneumonia, syphilis, variola, cardiac lesions, indigestion.

Backache occurs in malarial fevers, Bright's disease, congestion of the kidney, rheumatism, myalgia, strain of back, variola, varicella, measles, diphtheria.

Sore throat occurs in variola, rotheln, scarlatina, diphtheria.

Fever, thirst, anorexia, constipation and sleeplessness are common to such a great number of diseases they will not be considered.

The eruption is papular in measles, scarlatina, rotheln, syphilis, impetigo, erythema, lichen, variola, varicella, drug saturation, vaccinia, articles of food, ptomaine poisoning.

The eruption is vesicular in measles, rotheln, syphilis, impetigo, varicella, variola, drug saturation, vaccinia, external applications, soaps, erysipelas, malarial fevers, herpes zoster, dermatitis, iodoform, poison oak.

The eruption is pustular in syphilis, variola, drug saturation, impetigo, scabies, herpes zoster, acne.

The appearance of pinkish macules at the seat of eruption is often misleading.

I do not remember ever having seen a case of small-pox showing the pre-eruptive rashes spoken of by some authors.

The eruption does not always leave disfiguring scars; the scars are the evidences of severe inflammation in the papillæ, produced oftentimes by irritating applications before the diagnosis is made. Ordinarily the scars will fade away, and at the expiration of a few years they will have disappeared entirely; this, at least, has been my experience.

The appearance of an eruption in the palms, in the soles, on the ears, on the scalp, or on the

penis does not necessarily mean "variola," although the appearance of an eruption on the palms is usually considered pathognomic. Syphilis will attack the palms, so will measles, at the same time it deserves a place among the positive symptoms. I have seen several cases of small-pox where the palms and soles have been entirely free.

The soft palate, the roof of the mouth, will show the eruption in measles, scarlatina, rotheln and small-pox usually before it appears elsewhere on the body.

Rhazes, in *Liber ad Almonsolem*, wrote: "When anybody (especially a child or young person) is seized with an acute continued fever, together with a pain in the back, itching in the nose, starting in sleep, heaviness of the head, redness in the cheeks and eyes, and a pricking all over the body, then you may be sure that the patient will certainly have either the measles or the small-pox break out."

In *Liber Continens* we find: "If a person has a pain in the back, without any other symptom of the disease, and the bowels are relaxed and the urine white, he is going to have the small-pox. And, in short, there is no more characteristic symptom of the small-pox than pain in the back with fever; so that when you see this happen in the autumn you may be sure that the small-pox is about to appear rather than the measles, for the measles are not attended with pain in the back."

Bachtisheva, who lived between 700 and 800, wrote: "The symptoms of the small-pox are fever, with redness of the face and body, and especially an intense redness of the gums at the commencement of the disease; if the pustules are raised like berries, it is the small-pox, but if the red places are nearly level with the surface of the body, it is the measles."

Reading these extracts, what could be easier than the correct diagnosis of small-pox? Surely there must have been much information concealed between the lines.

The processes leading from papule to vesicle, to pustule, to scabbing, and to decrustation, are so named at the termination of each process—i. e., papular is at the completion of the papular stage, and so on.

The seat of the lesion is in the stratum mucosum, and cell degeneration proceeds both laterally and vertically; the localized œdema gives rise to the shotty hardness of the papuli.

Whether the discovery of the protozone by

Councilman will bear more fruit than those of Guarnieri, Pfeiffer, Clarke, Huckel; is hard to say at the present time, but a continuation of studies along this line will undoubtedly result in the discovery of the infective organism.

The papule of small-pox does not disappear upon pressure, the vesicle does not rupture under gentle pressure, nor does it evacuate upon a single puncture of a needle; even when rupture has occurred the vesicle covering does not peel off as we would notice in varicella, erythema or dermatitis herpetiformis. The vesicles do not form empty balloons when punctured. When the pustule has formed, a single puncture, followed by pressure upon the apex, will cause the characteristic umbilication; this umbilication is permanent.

The fever of small-pox will reach a high point, 105° to 106° Fahr., in the initial stage, to fall with the appearance of the eruption. This fall is not to the normal, but to 99° to 101° . Too much stress has been placed upon this fall. The odor of small-pox is peculiar, is characteristic, but not always present to a noticeable degree.

In *measles* we have papules and blotches, coryza, with red and watery eyes, photophobia and coughing, increase or continuation of high temperature after the eruption. The eruption is raised above the surface: it sometimes becomes hard like that of small-pox, but a few hours will correct this mistake. The mouth and fauces are bright red in color. At the expiration of two or three days the rash fades and branny desquamation follows.

In *rotheln*, the eruption is first of a pale rose color—macular—then the papular form follows; these papules are not as distinct or as large as those of measles. They may form large patches. The sore throat is the principal cause of annoyance.

In *impetigo*, the eruption appears at the start, generally, as pustules, although a few vesicles may form from a pea to a finger-nail in size, with thick walls well distended. They dry in a few days, forming yellowish or straw colored scabs.

Syphilis usually gives evidence of exposure or the presence of scar. With the known tendency to falsify, the examination of such suspects must be slow and careful.

Physicians meeting cases suspected of being small-pox have an advantage over those officially connected with such a service, since their opportunities for observation of the cases are un-

limited, and when the turning point has been reached, the point where the responsibility of diagnosis must be met, they can very gracefully and quietly acquaint the family of the suspected state of affairs. Should a negative diagnosis result after an official examination, he has not lost anything in the estimation of the people, but rather gained prestige. The same applies to a positive diagnosis.

1106 P Street, N. W.

A REPORT OF ONE HUNDRED CONSECUTIVE OBSTETRIC CASES.*

By GEORGE BARKSDALE, Ph. G., M. D., Richmond, Va.

The following report, embracing my first hundred cases of labor of all kinds, from a month to full term, is meant to exhibit some things that are likely to happen in every confinement. A great many of the infants were born in dens of the most utter squalor, but as statistics will show, sepsis has been with one exception unknown. Of the hundred cases 13 were premature, 1 at one month, 1 at two months, 5 at three months, 1 at three and a half months, 1 at four months, 4 at six months, 1 at six and a half months, 2 at seven months, the remainder being at term. Fifty were male, one of anomalous sex, five undetermined, the rest were females. Two cases—that is, four children—were twins, all females. Eleven cases were children of black or mulatto parents. Of these, nine cases were full term. The legitimate infants numbered 95, five being illegitimate, two white and three black.

The Mother.—Hodges' forceps were used in every case of instrumental delivery, which numbered six times, without fatal result to the child, although the perineum was lacerated in one instance. Perineal laceration from natural causes occurred in four instances, and then partial only. Cutting operations were not resorted to in any instance either to deliver the child or to save the mother.

The presentations were: Normal head presenting in 98 cases, breech 1, podalic 1.

Puerperal eclampsia occurred in two cases, both mothers dying, one child dying, two living. Placenta previa occurred in three instances,

*Read before the Richmond Academy of Medicine and Surgery, June 23, 1903.

mothers all lived, two children dying, both born at about the seventh month. One child lived. Prolapse of funis happened in a single instance only. Child lived, but very badly asphyxiated. Version was performed six times, two living children, four died. Versions were done, two for placenta previa, one for separation of the placenta and profuse hemorrhage, and one for a face presentation, the child being enormous. Two to deliver a woman dying of eclampsia, the child last born was delivered post-mortem. Both lived. Separation of the placenta before birth occurred once; child died. Sepsis occurred in a single instance. It was of a mild type, and the patient recovered. Post-partum hemorrhage once, and was very easily controlled.

Mammary abscess occurred in two instances. Milk for the infant was given in abundance in every instance, in which the child lived, but for reasons known only to the mothers, nine were put on bottles, and we shall see presently with what results. Subinvolution of the uterus once only. In this recovery slowly took place.

The Child.—Of the 100 children born 79 were alive at birth, 21 non-viable, while 11 are known to have died since birth, from one cause or another. Six of the eleven are known to have been bottle fed, 2 died of atrophy, 1 of asphyxia, 1 of diphtheria at three years old, 1 of meningitis; 55 of the hundred are living at the present moment, showing a mortality percentage of 54.5 per cent. in bottle fed infants, against 5.4 per cent. in nursing children, if we consider those alive that we are uncertain of.

Prolapse of the cord in one instance, although it was repositied, came very near producing fatal asphyxia. Artificial respiration, by Sylvester's method, was tried, but nothing short of mouth to mouth insufflation set up respiration. Hemorrhage from the cord occurred in one instance. It was tied once with silk. The child's life was saved by prompt religaturing. Silk has not been used since. Proliferation of granulation tissue at the umbilicus occurred once. It was tied off with spool cotton. Two had gonorrheal ophthalmia, one losing an eye in spite of having nitrate of silver solution instilled. Icterus neonatorum occurred once, and was treated by giving sodium phosphate.

The case of anomalous sex proved to be a female with a clitoris resembling a penis; the foreskin and glans being present, but no urethra. The mother of this child had borne one child, almost exactly similar, before I attended

her. Both children died of simple atrophy. One child had supernumerary toes.

Of the thirteen abortions, one was induced by myself because of a detached and bleeding placenta; two were in women who had badly lacerated cervixes; one was after a paroxysm of malarial fever, although no quinine had been given; one by criminal abortion, afterwards confessed to by the mother, who would not divulge the abortionist's name; one was due to syphilis. Seven were from causes unknown.

Several living children had milk in their breasts. No injury resulted to the five living children by using the forceps, one being dead when the instrument was used.

Treatment pursued in the cases of the mothers in the difficult labors.—To prevent perineal tears in instrumental delivery the foetal head was never drawn through the vaginal orifice before removal of the forceps. In fact, in one instance they were removed and reapplied. The tear in the single instance was in a woman married when past thirty, and a primipara. Since the completion of my hundredth case I have had a very similar case, this being also in an elderly woman.

Two lacerations from natural causes were probably due to the head being born before chloroform could be administered. Two occurred in sisters, but whether this was due to congenital atresia of the vaginal orifice I am not prepared to say. Both were anesthetized, and the child's head in both cases literally peeled out of the vagina. The lacerations were always stitched before leaving the house.

In one case of eclampsia the patient was unconscious when I arrived. She was breathing stertorously, pupils widely dilated, and every evidence was present of rapidly approaching dissolution. By chance I knew her to be pregnant, since she was very obese; therefore I hastily dilated the os, did version and a living child was delivered. Returning to remove the placenta, I discovered another child, and before I had done version on this one likewise the mother breathed her last. As we have already observed, both children lived. This woman had engaged to attend her an old negro woman who, of course, knew scarcely anything of midwifery.

In the second case of eclampsia we notice again the result of not having a law regulating midwifery. This was a primipara, a very obese young person, of perhaps twenty years. I had been sent for on account of an obstinate epis-

taxis. I stopped the posterior nares, gave a purge and extract of thyroid, and left. A day or two later I was sent for in the night to see her (I had to go some five miles in the country), where I found her in labor; the child was still-born next day. During her labor she had been under the charge of her grandmother of some eighty years, who, with the pertinacity of some old people, persisted in doing the wrong thing. I found the medicine had not been given. The day following I still found the medicine had not been given; the woman was unconscious and having a high fever. The next day she died from toxemia.

In the case of prolapsed funis, chloroform was given to profound anæsthesia. Version was done to rapidly deliver the child and stop the hemorrhage.

Sepsis occurred in the case of face presentation, because of the vile surroundings. Creolin douched into the vagina, and large doses of quinine soon brought about convalescence.

The case of post-partum hemorrhage was arrested by passing a hand into the uterus, and the hypodermic injection of 30 minims of fluid extract of ergot.

The mammary abscesses were treated by using hot fomentations, and then incisions.

The case of subinvolution was treated by using a pessary, tonics and rest.

Thus, in rather a cursory manner, I have gone over the obstetric cases that have come under my care during my novitiate, giving the merest outline of treatment in most instances because my methods were simple. Not in a single instance, be it noted, was a breast binder used, which I hold to be mischievous devices of man to thwart the purposes of nature.

3900½ Williamsburg Ave.

USES AND ABUSES OF FORMALIN IN SURGERY.*

By JOHN L. JELKS, M. D., Memphis, Tenn.

The subject of formalin and its use as an antiseptic has been discussed, both favorably and unfavorably, all over the civilized world during the last few months. Such flattering reports have been made concerning this chemical as a local antiseptic that its further antiseptic possibilities have been sought by its instillation into the general system; first, by cataphoresis; second, by sorbefacients; finally, by its introduction directly into the veins. And here I wish to pause long enough to remark that in our mad rush for honor and fame it seems some other equally aspiring must go us one better, and sometimes havoc is wrought by injudicious and unskilful use, and by a practice of radical measures with such a powerful chemical.

On February 3, 1900, I read a paper before the Memphis and Shelby County Medical Society, entitled "Pus in the Pelvis—Difficulties Encountered and Surmounted in Operations on the Female Pelvic Organs." (*Memphis Medical Monthly*, August, 1900.) In this article I reported what I then considered a remarkable result from the applications and irrigations of carbolic and formalin solution in the uterus, and had at this time, in one case, laundried a pelvis which had been soiled by the rupture of a large pus tube and ovarian abscess with gauze sponges wrung out in weak formal solutions. I had also used the same solution at Searcy, Ark., in irrigating a walled-off appendical abscess cavity. (*Trans. Ark. State Med. Ass'n*, 1901.) Those cases in which formalin was used in the abdomen recovered.

In October, 1900, I reported at the Chattanooga meeting of the Tri-State Association of Alabama, Georgia and Tennessee, as "a unique gynecological case," what I considered a remarkable result. The case was a post-partum infection of the uterus, with marked symptoms of septic intoxication. The uterus, which was subinvolved and retroverted, was filled with pus. The ordinary and usual treatment of irrigations with bichloride of mercury and carbolic acid seemed insufficient to control the toxic symptoms, and all indications pointed to a speedy death. Having on previous occasions

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*Read by title before the Arkansas State Medical Association, May 30, 1903. Also read by invitation before the Tipton county, Tenn., Medical Association, July 7, 1903.

used formalin in similar infections with good results, I decided to use the same treatment in this case. Suffice it to add that the results were so prompt and decided that there were no longer doubts as to its efficacy in the treatment of all infections, whether acute or chronic, which involved this organ. I omitted the fact that in this case the infection had progressed beyond the endometrium, and into the parenchyma of the uterus. I observed that the first irrigation, which was an aqueous solution of formalin, was insufficient. The second irrigation, however, was with a strong solution of formalin with a small amount of carbolic acid added. The uterus was lightly packed with gauze saturated with this solution, and, to my delight, when I returned the next morning, there was no further pus or odor, and the case terminated rapidly in recovery.

On November 4th, last year, I read an article before the Memphis and Shelby County Medical Society entitled "My Experience with Formalin in Surgery" (*Hot Springs Medical Journal*, December, 1902), from which I quote freely. I have repeatedly in the last six years in my contributions to medical literature referred to my most satisfactory use of formalin, and I suppose I have used more of it than any one man in this country.

From a defensive standpoint, I should say all bacteriologists admit that formaldehyde is the quickest and most certainly destructive agent to bacteria known, and the most powerful anti-ferment. Infections of any kind when subjected to formalin respond readily to its antiseptic properties. The exception has been raised that it is too irritating, but to these my reply has been that also are bichloride of mercury, carbolic acid, permanganate of potash and other antiseptic solutions, made so by concentration. I have used formalin in full 40 per cent. commercial strength on the skin, in the uterus, in pus cavities, on virile ulcers, in diseased bone and other tissues, yet I have seen no cause why I should not repeat such treatment in similar cases.

I have had friends thus use it in middle ear diseases, in mastoid abscesses of virulent streptococcic infections with most gratifying results. Another, through mistake, used it thus in an inflamed urethra. When discovering his mistake he irrigated with about two gallons of hot water. While the first effect was that of a powerful irritant, its second effect was that

of an analgesic. It caused no stricture and cured the gonorrhœa. But I do not advise its use in such strength in these cases. Ulcers on genitals and elsewhere which have resisted the most vigorous applications of other antiseptics, respond promptly to mild solutions of formalin—one or two drachms to the pint of hot water. And, gentlemen, when you have endeavored days, perhaps weeks, to stop the ravages of a phagedenic ulcer on the genitals with your preferred antiseptics, let me ask you to pause long enough to remember this statement: Formalin will put an end to this phagedenic process, and you need not fear to use it. In cases of lymphatic infection in groin, axilla or neck, which week after week has discharged pus from an apparently inexhaustible source, formalin I have long since learned is a most reliable remedy.

Some have said impossible until all that chain of glands have been removed. But this positively is not true. Cut down into and curette away the necrotic tissue, wash the cavity with strong formalin—1 to 50—and pack for a few days.

In acute gonorrhœal infections I know of no other remedy so reliable as formalin. I have repeatedly stopped these gonorrhœal infections in ten days to two weeks. Since my article, read November 4, 1902, appeared in print, I have received many flattering reports and inquiries from the profession as to its use in that disease. I had not stated what salt and strength of zinc in combination with formalin was used. My preference is for the sulphate. However, I have also used the iodide. I think the sulphate is the best salt to combine with formalin, as the same in one-fourth to two grains to the ounce and glycerine, controls perfectly the hyperemic condition of the mucous membrane which results from the formalin. The secretary and other members of the Memphis and Shelby County Medical Society accepted my invitation and witnessed my treatment of gonorrhœa, and demonstration of the entire disappearance of the gonococcus within two weeks after treatment was begun. In the chronic cases I have found that this treatment will, in many cases, fail unless combined with massage of the prostate. I milk the prostate and engorged ducts, then go in with the Swinbourne tube and apply either formal-picric, formal-pyoktannin or silver solution to all granular surfaces. In some of these cases, where granulations are quite profuse, I pack the urethra with gauze wrung out

in formal-picric solution and saturated with the following:

R—Ichthvolgr. xij.
 Resorcingr. xij.
 Castor oilq. s. $\frac{3}{4}$ iv.—Mix.

The relief furnished in these cases is quite prompt and decided. The time required in the most chronic and obstinate cases to effect a cure has been from one to three months. A test is given in a night's debauch with plenty of the adjuvants requisite to congest these organs and to liberate upon a warm nidus all of the gonococci of Neiser present and capable of being aroused. Of course, with this experiment is furnished the patient ample protection from a fresh source of infection, as well also protection to the innocent.

In due time another microscopic examination is made, and if no gonococci are found, I tell my patient that in exchange for balance due on account I will furnish him a clean bill of lading to hand his innocent bride. This, gentlemen, is a conscientious method of treating such cases, and while seemingly extravagant, and some might judge indignant, I feel assured that were all equally thorough not so many women would suffer with pus tubes, and the danger of having these organs removed.

A few weeks ago at Nashville I called forth a vigorous protest from some of the members of the Tennessee State Association when I reiterated the statistics of good men concerning the vast number of married women in whose genitalia were indefinitely sheltered gonococci, latent, perhaps; yes, but under favorable circumstances capable of awakening to their devastating processes. Hence, the sweeping statement of other good men that gonorrhœa is never cured.

In tænia circinnatta, formalin in pure strength rubbed on the skin I have found to be a certain and rapid cure. Where the tænia affects the face, however, care should be taken to protect the eyes; further, a warm solution of 50 per cent. strength I believe more powerful than full strength used cold. Formalin in strong solutions should not be used in clean, open wounds, or on clean, granulating surfaces. I have frequently removed warts upon the skin with pure formalin without a resultant scar.

In post-partum infection of the uterus the formalin solution should be combined with mild carbolic acid or iodine solutions, for the reason

that these infections in most cases have extended into the parenchyma of the organ, and while formalin itself is not penetrating to the tissues, these combinations make it so. Further, the uterus may be packed lightly with gauze saturated in this solution, whereby the lymph channels are forced to take up the formalin.

Now, then, as to the strength of my argument and claims that the lymphatics do carry the antiseptic properties of formalin into the general circulation, the treatment indicated by my previous articles, and my advice given to a veterinary surgeon, Dr. Scheibler, should be conclusive. The patient had been given numerous injections of anti-streptococcic serum for the relief of a "puerpera hemorrhagia" with no apparent benefit. At my suggestion, formalin solution, injection under the skin, was used. At the first injection the temperature was 104 4-5, respiration 23, pulse 85. The first hour showed no change. One and a half hours later—8:30 P. M.—there was a decrease of 4-5 of a degree. At 10 P. M., temperature of 103 1-5, at 11 P. M., 102 1-2; the next day at 6 A. M., temperature 99 1-2; at 7 A. M., normal temperature of 100 degrees. At 10 A. M. the temperature had risen half a degree; at 1:30 P. M., temperature again normal, where it remained.

I wish to add, gentlemen, that this, as also other conclusive and demonstrative work of mine, that formalin could be utilized to neutralize the toxins in blood infections, had preceded the world-famed work of Dr. Barrows, of Bellevue Hospital, New York. And while I have since used it in the manner advised by Dr. Barrows—namely, directly into the veins—I consider the same hazardous, and that it should be used this way only in extremes, and then only by one experienced in the use of this chemical. Formalin directly applied extracts the hemoglobin, hardens the cells and renders the corpuscles incapable of performing their nutrient function.

This experimental work, advised and practiced in the case of puerpera hemorrhagia in the horse, preceded the famous reports referred to, and in my articles of these last years I referred to its non-penetrability, and hence the preference of combining it with other chemicals.

In carbunculos, after excision, the hot formalin irrigation and dressing with gauze wrung out in hot formal solution and covered in such a manner as to confine the gas, stops

the infection short. This, I know, will seem a remarkable statement, but one which I assure you is true.

A case of pyemia—thirty puncture wounds were made in various parts of the body and three and a half gallons of pus liberated. I used in this case the intravenous injection of a pint of the solution advised by Dr. Barrows with only temporary abatement of symptoms. The same results were afterwards obtained by filling muscular interspaces with the same solution, combined with picric, carbolic and saline solutions. The patient eventually got up and was able to be about the hospital, but suddenly died from an embolus which lodged in the brain, and due to an endarteritis or phlebitis, caused, perhaps, by the intravenous transfusion of formalin.

CASE REPORTS—ST. JOSEPH'S HOSPITAL.

My dentist friends, Dr. J. L. Mewbern and W. W. Brooks, have used this chemical by my suggestion in the treatment of diseases of the antrum, putrescent pulps, necrotic conditions in fractures of maxillary bones, pus pockets and pyorea alveolaris with remarkable success.

Lyceum Building.

Ergoapiol (Smith) for Suppressed and De-ranged Uterine Functions.—Dr. James A. Black, of Hospital Department of Pennsylvania Reform School, writes that patients suffering from disorders of the nature referred to are usually drawn from the middle walks of life, who shrink from local examination or treatment. A very limited list of remedies of demonstrated value is presented for selection. The exhibition of ergoapiol (Smith) in several such cases some time ago under his care yielded such happy results that he has used it repeatedly since in a variety of such conditions with uniformly good effects. In the treatment of irregular menstruation and the usual attendant conditions, he has found one capsule of ergoapiol (Smith) given three or four times a day superior to any other emmenagogue in the following important particulars: It is prompt and certain in action; not nauseating and not rejected by the stomach; absolutely innocuous; convenient to dispense and administer; it occasions no unpleasant after effects. He details a number of cases treated and relieved by the capsules.

ADAPTABILITY OF WESTERN TEXAS FOR THE CARE AND TREATMENT OF CONSUMPTIVES.*

By C. H. WILKINSON, M. D., Galveston, Tex.

It is probably unknown to the vast majority of medical men in the United States, or elsewhere, that here in Texas—right here in easy reach of nearly any invalid in this country—we have as fine a climate for the care and treatment of consumptives as can be found, perhaps, in any other quarter of the world.

This statement is laid down as a broad fact, and one indisputable; and it is of so much importance, both to the physician, ever on the alert for aid for his unfortunate patrons, as likewise to the unfortunate principals seeking aid themselves, that I trust my efforts to develop and emphasize my subject may not prove burdensome to my listeners. Many circumstances have combined to keep this knowledge from the people; and other favored regions in the great West have, through the agency of custom and money, done much to divert the attention of those most vitally interested in this subject from the choicest spot of all. But the truth is beginning to dawn, and if our own physicians would only investigate the field now being introduced to their attention, they would soon become convinced that in the western portion of our State we possess a climate surpassed by none on earth as a healing place for phthisis.

Western Texas.—The portion of our State to which particular attention is invited for the health-giving properties of its climate, is known as Western Texas, and its limits may be defined, for geographical simplicity, merely as the Colorado river on the east, the Rio Grande on the west, the 32d degree of latitude on the north and the Gulf of Mexico on the south. The surface of this territory is undulating, and rises from an elevation of 500 feet at its eastern border to one of 5,000 feet at its western limits, except along its southern boundary, where it is low and level. It is safe to say that within the area just described there can be found the natural sanitarium of the world.

In summer the days are warm, as they are everywhere in the United States during this season, but they are nearly always clear, while the nights are always delightful. The winters are short lived, and usually mild, and only ex-

*Presented to the Texas State Medical Association, April 29, 1903.

ceptionally do rains occur to any great extent in any season. The extremes of heat and cold, therefore, in Western Texas rarely ever attain the degrees noted in many of the famed places further North. Abounding everywhere throughout this country are springs and streams of crystal waters, while fish, flesh, fruits and vegetables can be found all through the year, and usually at very moderate cost. This section of the State is also traversed by four great lines of railroads, rendering it easily accessible to any one desiring to visit its beautiful places, and bringing within easy reach the luxuries of the larger towns and cities of the State. I would lay particular stress upon this question of accessibility to invalids, for be it so famed and so healthy, no spot on earth can ever acquire popularity as a bourne for invalids if it is beyond the reach of modern methods of travel. With the railroads go civilization, convenience, luxury and cheer, and he who is forced to cast his lot in sickness beyond their reach is indeed unfortunately located.

The scenery here in many places is often grand and even majestic, while the lap of nature for many weeks in the year is covered with the carpet of the gods, making a scene at times so beautiful as to call forth bursts of ecstasy from the beholder. Besides these natural attractions, schools and churches and hospitable homes are to be found in nearly every town and hamlet.

The Climate.—Having briefly alluded to some of the physical features of Western Texas, I now come to that characteristic which places it far ahead of any other State in the Union in point of adaptability for the care and treatment of cases of consumptives. As stated before, the degrees of heat and cold rarely ever attain those extremes so frequently found elsewhere further North and West, since an ever-flowing gulf breeze tempers the heat in summer, while balmy sunshine during winter tends to furnish warmth and cheer to the earth and all the inhabitants thereon.

"Northerns," however, do frequently occur in winter, and sometimes blizzards, but these are over in a few days, are rarely ever attended by serious inconveniences to any one, and are usually invigorating. If their presence is objectionable to invalids in Texas, what must they be to such in Colorado and New Mexico? The diurnal range of temperature, however, in Western Texas is rarely ever severe. You never

have the four seasons illustrated in one day, as is a frequent occurrence elsewhere. The approach from a noonday's heat to a midnight temperature is gradual and peculiarly refreshing. Quite recently, in conversation, a gentleman—a patient of mine under treatment for phthisis, and who had spent a season at one of the Rocky Mountain resorts on account of his disease—stated to me: "If ever you have occasion to write upon the climatic treatment of consumption, please emphasize the fact that out where I was last summer the range of temperature would be so great at times that often a seeming fall of 50 degrees would occur within a few minutes, and we would all shiver as though we had a chill. This, too, occurred nearly every evening." No such change of temperature as this ever occurs here, as a rule. Shade, however, is eagerly sought by day and a blanket is always acceptable at night, in summer. The atmosphere of Western Texas—the agent that does the reparative work in phthisis—is, in some localities, not only remarkable, but very nearly perfect. Pure, elevated, crisp and dry, it constitutes an ideal "lung food," and approaches nearer being a specific for incipient tuberculosis than any other agency known to man. Its peculiarly exhilarating effects might be likened to those of a moderate glass of champagne upon the human system. One is, therefore, always stimulated under its influence, with none of the depressing effects in sight that follow the use of alcohol.

In the central portion of this country, it is the boast of the people residing there that fresh meat suspended in the open air never taints, and I have been informed that incised wounds inflicted never suppurate unless grossly mismanaged. In other words, pyogenic germs cannot survive in such an atmosphere, nor can the bacilli of tuberculosis thrive under its powerful influence unless they are carefully nurtured.

During the past three years the writer has given this subject some special attention, and he can verify the statements made by others as to this desiccating property of the air. For instance, in Kendall county, along a main thoroughfare, are suspended three wolves. These were slain in November last, and after being scalped were hung as trophies along the highway mentioned. They are hanging there to-day, apparently as fresh as when first slain, although they were never eviscerated. This simple illustration is sufficient to confirm my general state-

ment as to the preservative effects of West Texas air, yet many more striking ones might be introduced in corroboration of this peculiarity were it necessary.

A most commendable feature of this atmosphere, and one that makes it particularly pleasant to dwell in, is its moderate rarefaction. It is intermediary between the two extremes, and one living in it is comparatively free from hemorrhages, nervousness and insomnia—three conditions that may reasonably be expected in the higher atmospheres. Again, the heart, always weakened from the beginning in consumption, is not overtaxed in an intermediary attitude, as it is unfortunately too often in the higher.

Coming now to the practical illustration of its adaptability for phthisis, I will state that one year ago I opened a camp for the purpose of treating consumptives at the little German village of Comfort, just fifty-two miles northwest from San Antonio, and about 1,700 feet above the level of the sea.

My camp consisted of some twenty first-class tents, neatly furnished and so arranged as to have an abundance of fresh air in and around them all the time. These tents were supplemented by a frame building 70x40 feet in dimensions, so as to afford protection in case of unusually inclement weather. From the start my camp has been continually patronized and my results have proven satisfactory. In every instance where patients applied in the incipency of the disease, they have either been cured or else so much benefited as to justify the promise of a cure in a few more months, if they remain there that time.

Seven cases in the second stage were all benefited, while those in the last stage (eight) were not influenced at all. These cases (twenty in all) were placed in tents and subjected to the open air or climatic plan of treatment, and amongst them were refined young men and women who were accustomed to warm and comfortable rooms at home. Yet these took kindly to their tent life, and while our winter there was an unusually wet and gloomy one—a phenomenal occurrence for Western Texas—there never was heard a word of complaint about cold or inconvenience from any of the sick. In other words, *camp life for consumptives in West Texas has proven a success.*

In this connection, the writer wishes to emphasize the fact that the field for humanity is a

large one and the harvest is, unfortunately, abundant. There are to-day close on to half a million human beings in the United States afflicted with tuberculosis, and of this vast army of invalids over one hundred and fifty thousand of them will die of that disease before the close of another year. No treatment outside of suitably selected atmosphere can offer any encouragement for the relief of such cases, and only those in the first or second stage of phthisis can have hope from climate or from any other agency we are familiar with. No reliance can be placed in any of the numerous delusions held out to them professing to cure. Such boasts are often "schemes to bleed," unconsciously, the victims already nearly exsanguinated.

In the face of all the light now placed before the profession, in the face of all the facts held up to them for their guidance, it seems to me that to hold a tubercular patient, a consumptive, back from the only chance he has for his life in climate, is misdirected and almost criminal advice. These cases should be shoved out to the front as soon as the nature of their disease has been established; to the front where a living chance awaits them, rather than be held back and temporized with until a hopeless issue is at hand.

No man living can truthfully boast of a system or remedy that will cure 10 per cent. of his cases of tuberculosis, not even in their incipency, and much less in their advanced stages.

In Western Texas atmosphere—that is, in properly selected Texas climates—85 per cent. can be cured, when taken there in their incipency, and a large per cent. of even the advanced cases can be relieved. In this statement I am borne out by hundreds of instances where invalids repaired to this famed locality, years ago, and are there and well to-day. Our cases should not be kept at home hugging some delusive remedy or paying tribute to some pernicious practice, until general infection of their systems has occurred, when it is too late to expect relief in any climate.

Consumption is a very insidious disease, but one easily curable in its early stage through properly selected climate. In its latter stage, however, it is probably never cured. Its victims are too prone to disregard its early symptoms. As soon, therefore, as the bacilli have been demonstrated in such cases (and they should always be looked for when practical), then such

patient, in justice to himself, to his family and to his physician, should be sent immediately to some choice locality—to some suitable climate—where his disease can be arrested, and Western Texas, and Texas air, and a properly conducted life in tents or open air, or other sanitary abode, is the place and the life for him to adopt.

What Places in Texas to go To.—As to the particular place for consumptive cases to resort to, it is very much a matter of taste and convenience as to where they go—just so they go west or northwest from San Antonio. All places in Western Texas are good, though some are better than others.

Along the line of the Santa Fe railroad we have San Angelo, Ballinger and Santa Anna, where health may reasonably be expected, provided, the invalid repairs there in time, remains there long enough and conducts himself in strict accordance with the general laws of *hygiene* as long as he sojourns there.

Keep out of all houses where it is practical to do so, for fear of reinfection, and live as much as possible in the open air. These same remarks might apply also to Mason, Llano and San Saba, further South, and off the railroad, except one. All these places are situated between 1,100 and 2,000 feet above the level of the sea, and all rank high in the matter of salubrity.

Fort Davis, in the western portion of this healthy district, and located near the Southern Pacific railroad, is famed as a resort for consumptives. It is 5,000 feet above sea level, and the atmosphere there is as perfect as any to be found in the world. Its elevation may, perhaps, be too great for persons affected with debilitated hearts, but otherwise it is a splendid place for invalids.

The writer's choice, however, is the county of Kendall, and more particularly the town of Comfort. This quiet little German village, located on the San Antonio and Aransas Pass railroad, is fifty-two miles northwest of San Antonio. Its elevation is between 1,600 and 1,700 feet above sea level, and the atmosphere and scenery prevailing there are simply magnificent. Its accessibility to the large and prettiest city in the Southwest makes it, along with its other natural attractions, the ideal spot for consumptives to reside.

But there are others, to describe which, separately, and even cursorily, would be to lengthen this paper beyond the limits of toleration.

Scores of them are eligible for the prompt and certain cure of incipient phthisis, provided the patient follows the injunctions just laid down for his proper hygienic conduct.

In conclusion, I will call attention to a very important item which should be borne in mind by every physician sending patients to Western Texas, or to any other place, in search of health. When practicable to do so, or unless otherwise provided for, every case of phthisis should be consigned to the care of some physician residing in the destined locality. This may appear to many as an unnecessary precaution, but the observation of the writer induces him to believe the contrary. All such cases need a guide and an adviser after reaching their newly-adopted home, as much so as at the one they forsake in search of health. Patients left to shift for themselves, no matter where they go, often, if not almost invariably, drift into most unsuitable places of abode or lapse into habits most pernicious for their welfare. They select, as a rule, the cheapest hotels or boarding-houses they can find, and thereby fail to receive the benefit they expected by taking on infection from the unfortunates who had preceded them in such unsanitary and infected places. Were they properly consigned to some respectable physician the result would be otherwise, for they would be forced out into the open air and be made to follow at least a sanitary existence.

Therefore, physicians, before sending consumptives into any locality in search of health, should formally direct them to a respectable local doctor, and such practitioners can generally be found out by consulting the printed roster of this association, if the case is intended for our State. The local physician thereby will take unusual interest in his case, while the patient himself, in seeing that he has a proper guide, adviser and friend, will feel encouraged and buoyed up, thereby adding greatly to his chances of recovery.

Dr. Rubberneck—"I guess our neighbor is thinking of trying an automobile."

Mrs. R.—"What makes you think so?"

Dr. R.—"Well, I saw him in the book-store asking the price of a book entitled 'First Aids to the Injured.'"—*Ex.*

PATHOLOGY AND SYMPTOMS OF CONSTIPATION.*

By MARK W. PEYSER, M. D., Richmond, Va.,

Secretary Richmond, Va., Academy of Medicine and Surgery; Examining Physician for the National Hospital for Consumptives of Denver, Col.; Assistant Physician to the Home for the Aged and Infirm, etc.

Though constipation is often a symptom of other conditions, as intestinal and abdominal tumors, chronic diseases, etc., it undoubtedly exists as an idiopathic affection, and as such, it will be dealt with here.

It is an habitual retention of feces in the alimentary canal, or it may be characterized by difficult or insufficient emptying of the intestines. Constipation, or costiveness, is met with in two forms, general or peristaltic and rectal. The second form is caused, in the majority of cases, by neglect of the habit of periodic relief, the impairment of the evacuant function of the rectum being a primary feature, and that portion of the bowel becoming a mere receptacle like the bowel above (*Fox-Gaillard's Medical Journal*, May, 1898).

The frequency with which evacuations occur in the healthy person varies with the individual. One movement daily is the rule, but in some it may be two, or even three, without detriment, while in others one evacuation every two or three days, or even a week, seems not to impair the health. One case is reported in which the patient, "since his 30th year, has been in the habit of passing stools once in six months or so." (*Sajous's Analytical Cyclopaedia*, Vol. II., p. 309).

There are no constant lesions in functional constipation, but if it endures it may cause changes which, themselves, may later become additional causes—namely, intestinal dilatation and hypertrophy.

Colonic distension, more or less, caused by gaseous accumulation, is a common accompaniment of constipation, but rarely a primary pathologic condition producing it, unless preceded by either intestinal paralysis or some form of obstruction. Pouches, containing mucous and fecal matter, may form as a result of paralysis of the muscular coat, and are found at the sigmoid flexure. Dilatation may begin at a distance of one or two inches from the anus (which seems spasmodically contracted) and occupy more or less the remainder, sometimes the whole large intestine, in which latter case the chief

distension is observed in the rectum, sigmoid flexure and cecum.

Hypertrophy of the muscular coat, which almost invariably occurs, is general, but most marked in the sigmoid flexure and upper part of the rectum.

Ulceration and perforation of the dilated intestine may cause fatal peritonitis. When ulceration occurs it is, perhaps, partly due to yielding of the mucous membrane from over-distension, partly to the constant irritation produced by the fecal mass. Perforation may ensue while the constipation is unrelied from the continuance of the ulceration or from laceration, or following evacuation, from progress of the ulceration (*Reynold's System of Medicine*.)

A considerable amount of chronic irritation and subacute inflammation of the cecum, colon and surrounding cellular tissues exists in every case of fecal impaction due to habitual obstruction. When this becomes acute, as it not infrequently does, typhlitis and perityphlitis are present. Peristalsis is reflexly arrested as a result of the subacute inflammation, and if a purgative be given in this condition induction of peristalsis will only result in an incomplete evacuation, and the intestine become more torpid than before.

Other results of habitual constipation are hematuria, ulcerative colitis, rectal abscess, fistulae, anal fissures, prolapsus ani, hemorrhoids, hernia, vesico-uterine tumors, prostatic hypertrophy, passive hyperemia of the pelvic viscera, cerebral hemorrhage, and in old persons mainly, as the result of colonic dilatation with sacculation, enteroliths.

The symptoms of habitual constipation may be direct or local, or reflex or general. Usually, when a person whose bowels are accustomed to move daily, habitually passes two or three days without an evacuation, he experiences dyspeptic symptoms, flatulence, sometimes nausea, a sense of fulness of the rectum, etc. These symptoms, which will be more fully detailed, are also experienced by the habitually constipated, but having become habitual cease to be observed, or, at all events, become tolerable.

Colonic distension, when present, produces more or less pain, which is nearly always referred to the chest. There may be interference with the functions of the duodenum; and consequently dyspepsia, from pressure upon it of the distended transverse colon. Irritation of the bladder and of the genito-urinary tract, neural-

*Read before the Richmond Academy of Medicine and Surgery, July 14, 1903.

gic pains in the ovaries, testicles, groins, loins and lower extremities sometimes result from the pressure of large fecal masses in the descending colon and cecum.

Diarrhœa is often a misleading symptom in habitual constipation. The presence of scybala, which may have formed in the sacculi of the colon, may excite constant desire for evacuation, and yet they are passed only after violent efforts. In this condition patients think they suffer with diarrhœa. In those who are habitually constipated, the rectum, by reason of the loss of natural sensitiveness, becomes impacted with dry, hard fecal masses of great size. Here, catarrh may be set up, and the passage of mucus excreted as a result, sometimes accompanied by fluid fecal matter, may closely simulate diarrhœa. Rarely membranous casts of the intestine are voided from time to time. They may be several inches, or even feet, in length (*Fagge, Practice of Medicine*). Osler says that the membrane is due to a derangement of the functions of the mucous glands, the nature of which is unknown; but Anders believes that membranous colitis or enteritis, which he has found to be invariably associated with a decidedly constipated habit, is a secretory neurosis, and that the catarrhal process may develop as a secondary event. The passage of the membrane is accompanied by tenesmus and severe colicky pains.

The true state of affairs may also be overlooked in what is sometimes called "cumulative constipation." In this condition the rectum, owing to the hurried and inattentive performance of defecation, is not completely emptied, resulting in a feeling of fullness and a sense of incomplete relief (Anders).

General symptoms are due, in the majority of cases, to a degree of autointoxication caused by the formation of septic materials and their absorption. There are malais, irritability, headache, vertigo, a feeling of languor, mental inactivity with insomnia, or the patient awakes unrefreshed from an unbroken sleep. The breath is foul, the tongue, which is often indented by the teeth, is coated. The urine is scant and high colored. The perspiration has an offensive odor, and the skin shrivelled, pasty and sallow, or it may be, jaundiced from pressure on the biliary duct. Eruptions, such as psoriasis, eczema, prurigo, erythema, urticaria and acne, often occur. The face flushes frequently, and under the eyes are deep purplish rings. There

may be frequent attacks of cardiac palpitation, which cause anxiety on the part of the patient. Shortness of breath is, at times, a prominent symptom.

Those who are habitually constipated are subject to attacks of vertigo and temporary loss of consciousness (*Loomis, Practice of Medicine*). In marked cases attacks of nausea and vomiting, with diarrhœa, may ensue; fever may also be present, and even typhoid fever be simulated (Meigs).

It is sometimes a question whether hypochondria and neurasthenia cause constipation, or are caused by constipation. The nervous affection is often probably the primary disease, which is followed by constipation; while in other cases, the habitual constipation leads secondarily to the nervous depression. The two conditions usually form a vicious circle, since each of them is able to keep up and to increase the other (*Strumpell, Practice of Medicine*).

Enlargement and pouching of the lower third of the rectum is a result of chronic constipation, which may not only counterfeit, but produce uterine trouble. It is found very often in virgins, and gives the pain in the back, discomfort on standing or walking (more particularly on standing), and the sensation of dragging and fulness as if the parts would fall. This is due to the distension and varicosity of the vaginal and uterine veins caused by the formation of a proctoceles, which presses forward the vagina. Intense pain is caused by efforts at defecation, which force the vagina and rectum downward to the pubis and perineum. These efforts, instead of relieving the patient, force the uterus downward, and through traction on the vagina, produce prolapse or retroversion. It is easily understood that since the cause is primarily the constipation, correction of the displacement will not relieve the patient (Kelsey).

303 Twelfth Street, North.

SOME SUGGESTIONS AS TO THE CONTROL OF VENEREAL DISEASES.*

By W. H. PRIOLEAU, M. D., Asheville, N. C.

In presenting this paper for discussion I do so fully cognizant of the vast amount of literature on the subject, and at the same time aware

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of the unfortunately meager benefits derived therefrom. Some of the suggestions offered will be at once recognized as those of our greatest medical philanthropists; others are the result of much personal thought.

Countries and States, from time to time, have passed laws regulating prostitution; but such laws, for self-evident reasons, cannot be enforced; and even if they were rigidly carried out, it is hardly probable that the public would feel the benefit.

Prostitution always has existed and will continue to exist, if not publicly, then secretly; and of all disseminators of venereal diseases the clandestine prostitute has the greatest number of victims.

I do not advocate the licensing of houses of ill fame, but as an aid to the limation of venereal diseases I suggest a periodical examination of the inmates of these houses. A health certificate should never, in my opinion, under any circumstances be given to a prostitute; for directly after an examination she may become infected, and before the next visit of the inspector she will have had opportunities for infecting many who, in turn, will transmit the disease to others.

Should a prostitute refuse to submit to such examinations she should be arrested for keeping a disorderly house and be compelled to pay the penalty of the law. Again: Should a prostitute be found suffering from a venereal disease she should be confined in a hospital and treated at the city's expense until cured.

There are in some States laws requiring the physician to report cases of venereal diseases. No physician is going to abide by such a law, and, furthermore, I do not think a physician has any right to reveal a professional secret of so private a nature. What I believe would accomplish more would be to find out from whom the patient contracted the disease and report that fact to the health officer. While no doctor has a right to expose a patient, every man certainly has the right to expose the woman who infected him.

In discussing the limitation of venereal diseases, Valentine clearly points out that ignorance and liquor are responsible in a great measure for the existing state of affairs. Liquor should not be sold in houses of ill fame. There can be no doubt but that whiskey is too often the indirect cause of many cases of venereal diseases. Prudence disappears when alcohol is drunk in excess. The above suggestions if acted

upon by a city might afford some protection to her citizens.

Now we must get the prostitute to protect herself and thus indirectly to help us in our work of control. Many women of this class will not listen to what we have to say, but there will always be a few who will derive benefit from instruction along the following lines: During his periodical examinations the medical inspector should talk to them of venereal diseases, explain the transmission and prevention, and if possible get their assistance in controlling them. A sensible woman will at once see that it will help her business to keep well, and she will profit by the instruction. Every prostitute should likewise be taught the examination of a genito-urinary patient, so far as it pertains to the stains on his linen, the shreds and filaments in the urine and the external evidences of venereal infection. She should permit no man to have intercourse with her until she has satisfied herself by such an examination that he is free from disease. Where doubt exists, he should be required to use a rubber covering or condom. This applies to the prostitute who openly plies her trade.

To reach the clandestine harlot is a more difficult task, and one worthy of the deepest consideration. We can come in touch with her only through the men who know her from what she is. These men should be told of the risk they run by going with such women. A "private snap" is always dangerous; for it must be remembered that such a woman plays the unwilling subject to each man desiring her so-called virtue. Education, along the lines laid down below, is the only way to reach these women. In other words, if we can educate our boys and men they will either avoid promiscuous intercourse or will act as missionaries to these women in the hope of saving their own skins.

The next important point to be considered is the education of our boys and young men. It is here that the family physician can do most good. We have seen the failure of the State laws to accomplish their end, but in a measure doing a certain amount of good. The same may be said of the church. Now, it remains for the general practitioner of medicine to take a hand in the battle; he may not be able to stop the vice, but he certainly can do a great deal towards the elimination of venereal diseases.

I am unwilling to discuss the necessity for houses of ill fame. Such institutions exist. We

may as well look facts in the face, and if we cannot reform the world, we at least can limit the diseases that are destroying our young men and indirectly our young women—our sons and our daughters.

I believe it is the duty of each physician to instruct the boys of the family over whose health he presides. He should explain to them the anatomy and physiology of the genito-urinary organs, and the venereal diseases connected therewith. In the most impressive way he should talk to them about gonorrhœa and syphilis; if possible emphasize the terrors of these diseases by showing casts or photographs of them in their most repellant stages. It is the father's right and duty to instruct his sons, but he is never certain of the proper time and is afraid to begin too early. The family physician, being a quasi outsider, and yet having the interest of his patients at heart, is a far better judge of the proper time for giving such information. Each boy is a law unto himself; some are ready to receive instruction at 12, others not until 16. Where lectures on anatomy and physiology of the genito-urinary tract and the diseases belonging thereto, are given in boys' schools, I would not advise such instruction before the age of 14; even 16, I think, is a better age for imparting such knowledge. These lectures should be illustrated so as to make them impressive—the nearer we can get to the real ravages of a disease the more lasting will be the impression on the boys' minds. If possible, it would be well to use the clinical material from nearby hospitals as a means of illustration. This, of course, is along the lines of educational elimination of venereal diseases, so ably discussed by Valentine at the last meeting of the American Medical Association.

Books written for boys fall short of the object desired. Everything must not be told the boy at once; the instruction should be gradual. Books, as a rule, only excite the vulgar curiosity to know more.

As an aid to prevention of venereal disease, every male child should be circumcised. The pendant foreskin only retains foreign substances and invites disease. It is acknowledged that the Jews contract venereal diseases less often than any other race—this fact probably being due to circumcision.

This article has been written in the hope of aiding in the solution of a problem which is claiming the attention of all true philanthro-

pists, and if any suggestion offered should be of advantage to those interested in this subject I shall feel compensated for my efforts in writing this paper.

MEDICAL EXPERT EVIDENCE.

By FRED. J. MAYER, M. D., Scott, La.,

Secretary Louisiana State Sanitary Association; Chairman Section Hygiene, Louisiana State Medical Society, 1901-'03; Chairman Section Quarantine Louisiana State Medical Society, 1894-'95, 1899; Chairman Section Medical Jurisprudence, Louisiana State Medical Society, 1902.

(Continued from July 24 No., page 206.)

It is not recorded whether a medical expert figured in the fanatical outbreak in Salem, Mass., in 1691-'92, when Giles Cory and eighteen others were executed for witchcraft as a result of the fanaticism evoked by Cotton Mather's preaching. The last execution for witchcraft in Europe took place in Posen, Germany, in 1793 (Vide. En. Br. v. 23, p. 460).

In 1678, at the trial of the Earl of Pembroke for murder (2), Mr. Raven, an expert called for the defendant, said: "I viewed the body, my Lord, before and when it was opened, and could find no blackness nor blueness, upon which the body was opened, and there issued thence clotted blood; then I looked upon the caul, which was withered and consumed, the heart was as loose as a rag and his lungs stuck to each side of his ribs; and as to the matter of the blood, that was not an extraordinary thing, for it is known to physicians that in all natural deaths there must be extravasated blood in the lower belly."

In 1679, at the trial of the murderers of Sir E. Godfrey (2), the eminent surgeons of the day, who held the *post-mortem*, solemnly testified: "All strangled people never swell, because there is a sudden deprivation of all the spirits, and a hindering of the circulation of the blood."

In our twentieth century egotism we laugh at the ignorance of that age, as much as at its quaint phraseology, and yet many a modern court could furnish instances just as ludicrous, were they not so tragic.

Recently, in the case of the famous bandit, Guiseppe Mussolnio, an epileptic, the chief of the "Piccaotheria," or southern branch of the Mafia, who for years not only terrorized the country, but convinced all classes that he bore a

charmed life, and even now, after conviction for life, is still regarded as a hero, a martyr and a demi-god, the experts, eminent Lombrosoites, determined to "outherod Herod" by trying to make it appear that this cunning criminal, far shrewder and daring than the minions of the law, was not far removed from "an anthropoid ape, or pithecoïd man" (2).

While both the legal and medical professions concur in decrying the evils of the present system, it must not be inferred for a moment that the custom of obtaining expert evidence for the guidance of courts would be "more honored in the breach than in the observance, for *ex abusa non arguitur ad usum*." On the contrary, it would be difficult to understand how correct conclusions could be drawn by court or jury without it, in any case involving medical knowledge, and most especially in criminal practice or in deciding testamentary competency.

As it is purely a medical question it may seem anomalous that the court assumes the right, and invariably exercises it, of laying down rules for the guidance, not only of the jury, but of the experts, and particularly where insanity is pleaded in defence, and in contested will cases, where testamentary competency is decided by the court, and not by the experts (10). "While experts may be called to testify as to states of mind and conditions of health, it is for the court to declare whether such states and conditions constitute irresponsibility." It is unfortunate that the law in its classification of mental diseases has sought to invade the domain of medicine, and instead of accepting a simple and scientific definition of insanity, like that of Hamilton's, that "insanity is a condition due to disease of the brain, and expressed by impairment of feeling, thought and volition," or that safe working definition of Hammond: "That person is insane whose mental processes are directly at variance with those of the average human mind," should have perpetuated the errors of the knowledge of the subject at the time the deductions were drawn, as evidence by the opinion of the judges requested by the House of Lords, in 1843, which is still in England, as in most of our courts, the rule of action, that opinion may be epitomized in the following excerpt: "(1) The jurors ought to be told in all cases that every man is presumed to be sane and to possess a sufficient degree of reason—to be responsible for his crime until the contrary be proven to their satisfaction; and that to estab-

lish a defence on the ground of insanity it must be clearly proved that at the time of the committing the act, the party accused was laboring under such a defect of reason from diseases of the mind as not to know the nature and quality of the act he was doing, or if he did know it, he did not know he was doing wrong." In other words, reduced to its last analysis, they made irresponsibility and immunity from punishment dependent on the alleged criminal's ability to distinguish right from wrong, a view that all students of psychiatry will admit is inconsistent with a true knowledge of the pathology of insanity.

Before proceeding any further it is well for the medical man to review the general rules governing expert opinion evidence, besides the rule quoted showing the classes where expert testimony is admissible. Lawson (11) lays down the following rules (to which there are sub-rules):

"Rule 28. But the opinion of a medical man in (a) matters not of skill in his profession (b), or on questions of law (c), or on conclusions or inferences, which it is the province of the jury to draw for themselves, is inadmissible.

"Rule 29. A medical man is an expert in the value of medical service (b) but not as to the measure of damages.

"Rule 30. The opinion of a medical expert may be based either on his acquaintance with the party whose condition is under investigation or upon a medical examination of him, which he has made, or upon a hypothetical case, stated to him in court.

"Rule 31. *The jury are not bound by the opinions of medical experts.*"

A remembrance of these general rules, together with an avoidance of any wrangle with counsel, will save medicos a world of annoyance, when called upon as experts and subjected to the frequent rude cross-examination of some breezy pettifogger who has read up the medical literature for the occasion, and who thinks he can score a point with the jury by casting ridicule on the expert, stalks, knowingly, on subjects about which his ignorance is in a direct ratio to the vociferous glibness with which he asserts it.

Rule 44—on admissibility—(Lawson) says: "The testimony of experts is entitled to the same credit, is to be tested by the same rules as are applied to the evidence of other witnesses, and should have weight with the jury,

according to their opportunities and qualifications, but is not conclusive."

Justice Miller (12) says: "I have no confidence myself in the impression produced by any number of ex parte affidavits of experts."

Judge Temple (13) declares: "That expert witnesses ought to be selected by the court and should be impartial, as well as wise, learned and skilful. A contrary practice is now, however, too well established to allow the more salutary rule to be enforced, but it must be painfully evident to every practitioner that these witnesses are generally but adroit advocates of the theory upon which the party calling them relies, rather than impartial experts, upon whose superior judgment and learning the jury can safely rely. Even men of the highest characters and integrity are apt to be prejudicial in favor of the party by whom they are employed, and as a matter of course no expert is called until the party calling him is assured that his opinion will be favorable. Such evidence should be received with great caution by the jury and never allowed, except upon subjects which require unusual scientific attainment or peculiar skill."

In deciding mental responsibility in criminal practice the courts in England were guided by Coke's *Commentaries on Lyttleton*, and later by the teachings of Sir Mathew Hale, up to the time of the famous McNaughton case, that evoked the reply of the judges to the inquiry of the House of Lords, already quoted. Medical science is concerned with the cause of insanity; law with its consequences. The law assumes that all men are sane until the contrary is proven and their legal responsibility determined. Stephens, in his "History of Criminal Law of England," says: "What are the elements of mental responsibility is, and must be, a legal question, for the meaning of responsibility is liability to punishment."

"The intent and the act must both concur," says Greenleaf, and, interpreted by the courts, the whole theory of criminal responsibility is based on the legal maxim: "*Actus non facit, reum nisi, mens sit rea*"—"the act itself does not make a man guilty, unless the intention were so." The good and evil principle implanted in every human heart is ever at war as long as the former predominates; owing to inhibitory conscience, the normal individual will avoid crime by recognizing the intuitions of conscience and its restraints, and obeying the laws of God and those which society has found necessary to sur-

round itself with; and criminal responsibility in the eyes of the law, if not of the alienist, ceases only when, in the words of Lord Denman (15) "that from the effect of a diseased mind he did not know at the time that the act he did was wrong."

Rice, in his recent work on evidence, quoting Judge Cox's charge in the Guiteau case, declares it to be "an epigrammatic statement of fundamental rules that underlie and support the entire fabric of criminal jurisprudence."

Now, the evidence in this case was complete to show beyond the peradventure of a doubt that Guiteau was a *paranoiac* with delusions of grandeur, and yet Judge Cox charged (16): "If you find him * * * that he *had possession of his faculties and the power to know that his act was wrong*, and of his own free will, deliberately conceived, planned and executed this homicide, then, whether his motive was personal vindictiveness or political animosity, or a desire to avenge a supposed political wrong or a desire for notoriety, or fanciful ideas of patriotism, or of the divine will, or you are unable to discover any motive at all, the act is simply murder and it is your duty to find him guilty."

The subservient jury, in violation of their oaths, and to appease the public clamor of a people ever ready to grow hysterical when the negro rapist and lust murderer pays the penalty of the unwritten law, a public who thirsted and cried aloud for expiatory gore, found this irresponsible creature, guilty of judicial murders.

Taylor (17) declares: "The law does not recognize moral insanity as an independent state, because, however perverted the affections, moral failings or sentiments may be, a medical jurist must always look for some indications of disturbed reason. * * * Moral insanity is not admitted as a bar to responsibility for civil or criminal acts, except in so far as it may be accompanied by intellectual disturbances." The line of demarkation between moral insanity and moral depravity is very faint, and the advice of Drs. Ray and Tuke (18), that every case must be studied by itself, the antecedent's educational influences, social entourage, bodily ill health of the accused, together with all circumstances bearing on the act, must be considered in order to arrive at a correct conclusion. It is interesting here to note that Plato, in his later writings, attributed moral evil to physical conditions, the Socratic principle of the "involuntariness of

vice" (Ency. Br., Vol. 19, p. 210). The German school (19) has clearly shown that the moral insanity of the old writers, existing without intellectual disturbance, is a form of the degenerating type with an underlying base of heredity—neurotic stock—in which insanity, epilepsy, chorea, hysteria and chronic alcoholism have been frequent occurrences, and the latter should not be underestimated, for in the words of Lombroso, "*A single embrace, in a moment of drunkenness, may be fatal to an entire generation.*"

Judge Brewster, Robert D. Esty and other authorities hold "that the true test of responsibility lies in the word 'power'—has the defendant the power to distinguish right from wrong and the 'power' to adhere to the right and avoid the wrong, and the power to govern the mind, body and estate?"

At the annual meeting of the Br. Ass. of Med. Officers of Asy. Hospit., 1864, the following resolution was unanimously adopted:

"That so much of the legal test of the mental condition of an alleged criminal lunatic as renders him a responsible agent, because he knows the difference between right and wrong, is inconsistent with the fact, well known to every member of this meeting, that the power of distinguishing between right and wrong exists very frequently in those who are undoubtedly insane, and is often associated with dangerous and uncontrollable delusions."

This was firmly impressed on my mind some years ago while visiting our State Insane Asylum, particularly at the weekly dance, where I noticed many not only with a knowledge of right from wrong, but a full appreciation of the observances of good society and its punctilious etiquette, who were unquestionably insane. It is undeniable that imperative and "insistent concepts," for a time inhibited by will power, may suddenly erupt with Peleean force, and lead to the commission of crime; concealed delusions, differing from a fixed delusion, in that the insane belief is only revealed at times, and at other times so concealed that the experts are confounded in the eyes of the jury, may suddenly erupt when the accused are off their guard.

While the right or wrong test continues to obtain in England, it must not be inferred that some of her most eminent jurists, like all the alienists, have not sought to abolish this false criterion of responsibility, for Justices Black-

burn and Cockburn, among others, admitted that this test could not, with justice be applied to those forms of insanity "where the will power was subverted by an irresistible impulse."

In Germany a pathological loss of will power is accepted as defence. With a more diffused knowledge of the pathology of insanity among the legal fraternity the day will come when all the States will follow the humane lead of New York, the sole legal test there being "that no act done by a person in a state of insanity can be punished as an "offence," the right or wrong test not being applied.

The expert when called in any case involving sexual perversion and crime may be required to interpret a salacious and inharmonious staccato—sexual paradoxia, a central neurosis, exhibiting sexuality in early youth, or old age, when normally, the appetite has not been awakened or has died out; sexual anæsthesia, original or acquired, a sexual anorexia; sexual hyperæsthesia, a pathological sexual gourmandism; and sexual paræsthesia, a want of harmony or divorcement from the natural purpose of the sexual instinct. The expert should be on guard to determine how much is due to sexual hyperæsthesia and how much to sexual paraæsthesia, for the conjunction of these two pathological conditions constitute, medicolegally, the most important group of sexual criminality; it frequently becomes the province of the expert to enlighten the court and jury as to whether the crime is due to vice or disease, and this is not always easy, for the sexual crime with a pathological basis, may be identical with one based on vice, and it is only by studying the motive, the environment, educational and hereditary, that a fair conclusion can be arrived at, enabling one to determine where the normal physiological phenomenon of sexual preference ends and pathological fetichism commences.

It is readily conceivable that a vast difference exists in the minds of two rapists, whose crimes may, to outward appearances, be the same and deserving of the same degree of punishment, and yet a psychological dissection might show the one driven by an inordinate lust, hereditary or acquired, that it has grown by what it feeds on, until its possessor stalks forth a true *paranoiac erotica*. The other, perhaps some callow yokel with a normal sexual instinct, but filled with the superstitious belief that obtains among many of the ignorant European peasants, that

an intractable gonorrhœa can be cured by sexual intercourse with a virgin, and who seeks this desperate remedial agency to fit him for his marriage couch.

When "we study the sexual instinct of either sex and determine their mutual dependence upon each other for the propagation of their kind * * * we cannot but regard these sexual instincts as the basic force of human existence." (20)

The religious history of the ancients, as related by Herodotus and Diodorus Siculus, reveals the fact that the generative function gave impulse, direction, form, symbol and motive to the earliest religious practices as among the ancient sex worshippers in India, China, Babylon, Phœnicia, Greece and the ancient Hebrews, and judging from the phallic and yonic (21) remains in California among the prehistoric races of this Continent, as it did in the friga cultus of the ancient Saxons, among the Dervishes, the Moslems with their sensuous idea of heaven, the flagellants of the Middle Ages, the Mormons of to-day, the Assouia of darkest Africa and the voodoo rights of the negro in the Southern States, where the vibrant thrill of the serpent evokes the erotic emotionalism that underlies the religious practices of the Afro-American, whether during the voodoo orgies of St. John's night or when exhorting or being exhorted under the mask of Christianity.

The ancient chroniclers tell us (22) that the temple of "Bit-Shagatha," or "place of union," in Babylon, was frequented by all women, who once in their lives had to yield their bodies to a stranger at his demand and without the privilege of choice, and could not return home until the ritual union was accomplished, and that postulants were so numerous that the ill favored or deformed had to await years before relief came. In the temple of Belus, in Egyptian Thebes, at Patara in Lycia, in the temples of Astorle of Isis and of Venus, a chamber with a couch was consecrated every night to a virgin's devotion to the ruling deity, and the fairest and noblest felt honored at the pious prostitution.

Pure as it may have been in the beginning, and, perhaps, necessary when the world was young, it was inevitable that the phallic worship of the ancients carried the seeds of its own destruction, and the obscene orgies that characterized the festivities of the gods soon pruned

the intellectual Greeks and the haughty Romans beneath the waves of a sea of sensuality, demoralizing in its tendencies and destructive in its character. It took centuries of the teaching of the "first moral philosopher," Socrates, and his followers, Plato and Aristotle, and later of the still more refined and sublimated philosophy of Him "who spake as never yet man spake," to rescue religion from its early erethism and to convert the pagan festivals into Christian feasts and the symbols of the phallic and yonic cult into the signs of a divine philosophy.

It is the psychic relationship existing between religious and sexual feelings and the danger of awakening a latent erethism that prejudices the thoughtful medical mind against the participation by young, impressionable females in religious hysterical revivals at a time when they are just budding into womanhood, when the wild whisperings of Eros may find an echo in their virgin hearts.

To the German school headed by Von Kraft-Ebing, we owe a better knowledge of this psycho-pathological state. The medical expert, upon whose opinion may hang a mitigation of sentence or consignment to the gallows, should remember that in psychopathic subjects there is a hyper-sensitiveness of the organization that may be hereditary and congenital and that under certain conditions a transference of emotion may ensue, so that even a pure and holy fervor may set in motion an eroticism that in its turn may be horribly perverted, and may even find a vent in sadism, or lust expressed in cruelty, sometimes to the extent of lust murder, or murder committed for the sexual gratification, the act of murder affords, or even in necrophilia or ghastly coitus with apassivism that erotically delights in bearing pain, as with the flagellants of the Middle Ages, or in the various forms of fetichism, or in still more unnatural sexual inversion; for as music differs from noise, only in the quality of the vibrations, so in neuropathic conditions the emotions may change from the divine harmony, to which the normal sensorium is attuned, and like "sweet bells jangling out of tune," sound every note in the hideous gaunt of psychopathy sexualis. Since all forms of sexual lust may lead to crime, when can irresponsibility be pleaded in defence? Only when, in the words of Dr. Chaddock (23): "The crime was the result of organic necessity; that owing to a neuro-psychical constitution

the individual was incapable of developing or acquiring ideas and feelings which act in opposition to animal impulse, or that pathological conditions had completely subverted them."

In a recent case in our court a negro accused of rape, together with his white victim and prosecutrix, were both found to be suffering with gonorrhœa, the experts having discovered the gonococcus under the microscope. Without questioning the diagnosis in this particular case, a note of warning came in the recollection of an error in diagnosis made in my early professional life, when I fancied I detected the gonococcus under the lens. What was my astonishment when my patient solemnly assured me that he had never approached a woman. I thought he was trying to deceive me, until the researches of Laber of Hille (24) pointed out the difficulty of detecting this microbe by the simple process of staining the specimen, and that the distinguishing characteristic of the specific gonococcus is the property of decolorization by the method of Gram, non-specific pus swarming with streptococci, used in the culture process. Failing to decolorize by this method, affording a reliable diagnostic aid in differentiating, even when the pus stains were found on shirt and chemise, in a suspected rape case, there is no doubt that the existence of a non-specific, muco-purulent discharge from the vagina or urethra has been the cause of divorce, suicide and murder, through the error of the diagnostician. Medico-legal literature teems with mistakes made as to certain anomalous conditions about the vulva, the existence or not of a hymen, etc. Bronardel relates a case where a father was accused of a horrible crime on account of the existence of a vulvar canal or cul de sac just above the fourchette and large enough to admit the thumb, in his little daughter, which, upon investigation, was found to be a malformation equally apparent in a younger sister (24).

We can readily picture to our minds a hypothetical case, where pregnancy in a virgin might be assumed as proof

"To the jealous confirmation strong

As proofs of holy writ,"

of coitus with a male, and yet there is a case on record of transference of seminal fluid from one female to another resulting in pregnancy of a woman who had never known male contact (25). History ever repeats itself, like the Romans in their decline and fall. As we grow

in wealth and luxury we drift from the buccolic tastes and simplicity of a pastoral or agricultural people to the refinements and neurotic degeneracy of urban life. Therefore, the subject of sexual crimes will continue to increase in importance, and not only medical thought should be directed to minimizing its horrors, but the public, thinly-veneered with false modesty, should be educated to its cause and prevention, its growth and danger to society. A false modesty hitherto has prevented the public discussion it deserves; a modesty that is shocked by the Apollo Belvidere or the Venus de Milo, and yet goes to fashionable functions in an evening dress—*i. e.*, a dress that is suited to Eve—a modesty that throws up its hands in pharisaical horror at public discussion, or education in sexual hygiene, and yet permits the entrance within the family circle, and reads with equanimity, the daily papers with disgusting "ads" surmounted by the vignette of some strumpet, of vegetable compounds for the relief of diseased ovaries, suppressed menses and rubber protection garments.

"Oh, for a 40-parson power to chant thy praise,
'Anglo-Saxon' hypocrisy!"

Both the medical and legal professions recognize the evils of the present system of obtaining expert evidence, but no plan has been suggested that meets with general approbation. Indeed, it is difficult to arrive at a solution that will not be either too cumbersome and clog the wheels of justice or upset the principles upon which our jurisprudence is based. Justice Woodward thinks it cannot be done by legislation; that the fault is not so much in the system "as in that relaxation of the professional and public conscience which has permitted abuses to continue uncorrected." In our criminal jurisprudence the accused has a constitutional right to trial by jury that cannot be usurped nor encroached upon by a medical expert, but in equity and probate cases such right does not exist. I cannot see, therefore, why in such cases, where the points at issue hang upon the opinion of the medical experts, why such opinion should not be received as decisive.

The Leeds practice in England has been found successful there. Briefly, it is this: In equity cases experts to sit with the court; in jury cases an agreement between all experts as to the facts before entering a discussion of the medical questions involved about which there might be a difference of opinion. So far as

the several States of this Union are concerned, the following plan might be suggested, if the suggestion serves no other purpose than to excite a discussion, from which may evolve a better plan, then the full object of this paper shall have been attained:

Let the Governor of every State be empowered to appoint from a list submitted by the leading medical society—

A. A commission of medical experts, composed of (1) physician, (1) sanitarian, (1) surgeon, (1) chemist, (1) alienist, (1) bacteriologist, (1) veterinarian, to whom shall be delegated the duty of drawing up—

B. A list of the registered, ethical professional men of the State who are competent to serve as experts in their respective specialties, and without prejudice against the school to which they belong, from which list the district judges of the State shall select in case experts are needed in their respective courts.

C. That in all equity and probate cases the court should select two experts, and in case of disagreement a third, to guide its deliberations in so far as medical questions are concerned, and to obtain the experts' opinion as to the applicability of the medical rules, to the physical, mental or psychical conditions or phenomenon presented in the case at issue.

D. That in all jury cases the court shall select two experts, and in case of disagreement a third, to aid the jury in the elucidation of all medical points involved, but without prejudice to the jury's right to be the sole judge of the facts, or the court's right to be the judge of the law.

E. That in the event of appeal to the higher courts in any case the decision of which was based on expert medical testimony, the parties at interest, may send a brief of the expert opinions evolved and the reasons therefor to the State Board of Experts, three of whom, best qualified to do so, may sit as a board of reviewers to aid the final court of appeal with their findings on the medical questions involved; their decision, and dissenting opinion (if any), to be submitted in writing to the upper court.

F. While experts in the lower courts may be subjected to cross-examination by counsel, it shall be with the same decorum that counsel assumes in addressing the court.

G. Litigants might be permitted to have ex-

perts before the experts in the lower court (in chambers) or before the expert commission.

H. Experts, when hypothetical questions are put, should reserve opinions until both sides are heard.

I. All experts should be paid by the State in criminal cases a per diem and mileage, and a percentum of the gross amount in civil cases, which could be prorated among the experts.

J. Any State or county expert who should prostitute his profession to the interest of any litigant, should be tried by the Judiciary Committee of the State society to which he belongs, and if found guilty of unprofessional conduct, should be expelled from its fellowship and his name erased from the list of competent experts.

Such a plan and procedure, combining some of the features of the Leeds and French plan, but without violence to the principles of American jurisprudence, would wrest medical expert evidence from the disrepute which has always pursued it. Expert evidence is as old as Anglo-Norman jurisprudence, and Wood says (2) "its disrepute has not grown less with years."

That the medical and legal profession should bend their energies to its reform is a "consummation devoutly to be wished."

Lafayette, La., April 10, 1903.

REFERENCES.

- (1) *Syst. Leg. Med.* Hamilton, V. I, p. 18.
- (2) *Expert Evidence.* Woodward. N. A. Rev., October, 1902.
- (3) *The Law of Evidence in Cir. Cases.* B. W. Jones.
- (3a) *Hallam's Hist. Eng.,* V. 8, Apndx. N. V.
- (3b) *Ency. Br.,* V. 23, pp. 460-7.
- (3c) Trans. by Fr. Von Schiel, O. P., by order of French Minister of Inst. Messrs. E. Leroux & Cie.
- (4a) *Med. Jurisp. Justinian's Codification Roman Law.* *Ency. Br.,* V. 23, p. 555; V. 13, p. 793.
- (4b) "Jury," *Ency. Br. V. 13,* pp. 783-8.
- (4c) *Wager. Enc. Br.,* V. 24, p. 305-6.
- (4d) *Ency. Br. V. 17,* p. 818-20.
- (4e) *Leg. Aspect of Torture. Ency. Br. V. 23,* 460; V. 5, p. 669.
- (4f) *Current Lit.* 1902.
- (4g) *Emp. Chas. V. Enc. Br. V. 5,* pp. 413-18; V. 22, p. 328.
- (4h) *Enc. Br. V. 13,* p. 786.
- (4) *Com. Law. Ency. Br. V. 6,* 208; *Ear. Eng. Law, E. Br. V. 8,* 276-9.
- (5) *Hist. Decline and Fall Roman Empire.* Gibbons.
- (6) *Current Lit.* 1902.
- (7) *Godkin (14 State Trials, 1342).* Hamilton's *Syst. Leg. Med.*
- (8) *Idem.*
- (9) *Syst. Leg. Med. Hamilton. Ency. Br. V. 24,* p. 621.
- (10) *Med. Jurisp. Wharton and Stille,* p. 193.
- (11) *Expert and Opinion Evidence.* Lanson, c. VI., p. 107-59.

- (12) 4 Dill., 448. 1877.
- (13) 40 Cal., 405. 1870.
- (14) Greenleaf on Evidence.
- (16) Insanity and Crime. Sachs, Sy. L. Med. Ham.
- (15) Vide. Insanity in its Medico-Leg. Bearings; Mental Responsibility of Insane in Civ. Cases. Pratt.
- Relation of Mental Defect and Disease to Crim. Responsibility. Binsee in Syst. Leg. Med. Hamilton.
- (16) Insanity and Crime. Sachs, Syst. Leg. Med. Ham.
- (17) Med. Jurisp. Taylor.
- (18) An Exam. of Objections to the Doctrine of Moral Insanity. Ray.
- (19) Moral or Emotional Insan. Tuke. Psychop. Sexnalis. Kraft-Ebing.
- (20) Sexual Hygiene. Ch. Pub. Co., p. 135.
- (21) Ancient Sex Worshippers. Rococo.
- (22) Inman's Ancient Faiths.
- Higgins Anacalypsis Celtic Druicks.
- Payne Knight Worship of Priapus. Hayards's.
- Nineveh. Hist. Prostitution. Sanger.
- (23) Syst. Leg. Med. Hamilton.
- (24) Sajous Syst. Med. 1888.
- (25) Syst. Leg. Med. Hamilton.

Book Notices.

Surgical Diseases of the Abdomen, With Special Reference to Diagnosis. By RICHARD DOUGLAS, M. D., Formerly Professor of Gynecology and Abdominal Surgery, Medical Department, Vanderbilt University, Nashville, etc. Illustrated by 20 Full Page Plates. Philadelphia: P. Blakiston's Son & Co. 1903. Cloth. 8vo. Pp. 883.

This is a new work, and takes up matters that many have long wished should be accessible in book form. The intent of the author has been to elucidate the difficulties of diagnosis of diseases of the abdomen by a more thorough study of their causes and nature. As operative technique is profusely given in numerous text-books, the author has deemed it sufficient in this book simply to indicate the proper surgical procedure, and to discuss some of the open questions involving the operative treatment and after management of abdominal cases. Such a book, so carefully prepared by an able surgeon, who bases his points of diagnosis upon actual personal observation and attentive study of the experiences and writings of others, will prove of very general interest and utility, either in perfecting operative technique, or in deterring the conscientious surgeon from undertaking operations beyond his ability to perform, with benefit to the patient. The page illustrations of such things as significant points of pain and tenderness in the dorsal region, significant points of

abdominal tenderness, areas of dullness produced by ascites and ovarian cyst, etc., are well selected and drawn, and are great helps to the diagnostician. A good index is appended. This book is compelled to take rank among the most trustworthy authorities in questions of diagnosis especially, and will be found useful to the general practitioner in deciding when to refer his abdominal cases to the surgeon for operation, etc.

Bacteriology. By FRED. C. ZAPFFE, M. D., Professor of Pathology and Bacteriology in Illinois Medical College, etc. *Lea's Series of Pocket Text Books.* Edited by BERN B. GALLAUDET, M. D., Demonstrator of Anatomy and Instructor in Surgery, College of Physicians and Surgeons, Columbia University, New York, etc. *Illustrated with 146 Engravings and 7 Colored Plates.* Lea Brothers & Co., Philadelphia and New York. 1903. Cloth. Small 8vo. Pp. 350

This is an excellent text-book for the college student, for the graduate in preparation for examination by State or army or navy medical boards, etc., and is full enough for the average practitioner in the bacteriological diagnosis of the general run of diseases with which he is apt to meet. The first fifteen chapters are devoted to general considerations essential to the bacteriological study of any subject. Seventeen other chapters are given to pathogenic bacteria, and descriptions of the media in which they are to be found. In an appendix, the student's individual bacteriology outfit is described, etc. Chapters not referred to above are also given on non-pathogenic bacteria—schiziniomycetes; moulds or filamentous fungi—hyphomycetes; yeasts or budding fungi—saccharomycetes. The profusion of illustrations serve as valuable helps to the student and general practitioner, who does only occasional bacteriological work.

Manual of Surgical Treatment. By W. WATSON CHEYNE, C. B., M. B., F. R. C. S., F. R. S., Professor of Surgery in King's College, London, etc., and F. F. BURGHARD, M. D., M. S. (London), F. R. C. S., Teacher of Practical Surgery in King's College, London, etc. *In Seven Volumes. Vol. VII—Treatment of Surgical Affections of the Rectum, the Liver, Pancreas and Spleen, the Genito-Urinary Organs, the Breast and the Thorax.* Lea Brothers & Co., Philadelphia and New York. 1903. Cloth. 8vo. Pp. 559.

This volume completes the series, devoted principally to the *surgical treatment* of diseases. The subjects considered in this volume are

named in the title. Throughout the series, it has been assumed that the reader is familiar with the nature and diagnosis of the disease in question; so that only such reference is made to pathology and symptoms as may render intelligible the principles on which treatment is based, "and the various stages of the disease to which each particular method is applicable." The work is well illustrated throughout. It is intended to serve the purposes of the practitioner, and as a work of reference—not as a college textbook. Practically speaking, the surgical treatment of every variety of surgical disease apt to occur in practice is given in one or the other of the seven volumes, which forms a most helpful library in the doctor's office. Each of the seven volumes has an index of its own, while the title page of each volume will show the general class of subjects considered in it. The fullness of details as to preparations and procedures and after treatment commends the work to the young doctor especially.

Treatise on the Care of the Expectant Mother During Pregnancy and Childbirth, and Care of the Child from Birth Until Puberty. By W. LEWIS HOWE, M. D. Philadelphia: F. A. Davis Co. 1903. Cloth. Small 8vo. Pp. viii-63. Price, 50 cents *net*, delivered.

We confess that we scarcely see the need of this book. Such advice as "theatres, concerts and dinners may be attended in moderation, although during the last two months (of pregnancy) they should be discontinued" is amusing. "It is advisable to wear flannel drawers during the last four months of pregnancy, *even if this occurs during warm weather*, and at all times closed drawers should be worn," is ridiculous advice. These are samples of the advice given, as many like "advices" are given. Of course, here and there some advice is given which will accord with the views of a sensible doctor.

Surgical Asepsis, Especially Adapted to Operations in the Home of the Patient. By HENRY B. PALMER, M. D., Consulting Surgeon to Central Maine General Hospital. With 90 Illustrations. Philadelphia: F. A. Davis Co. 1903. Cloth. Large 12mo. Pp. vi-231. Price, \$1.25 *net*, delivered.

"The aims of this book are to demonstrate that surgical work may be safely performed in the home of the patient, and to detail the methods which the writer has found best to secure such results." "If the home be a good one, and if the same degree of surgical skill and nursing

can be secured, the home treatment of surgical cases offers some very decided advantages over the hospital. The home environments, the greater degree of quiet which may be secured, and the knowledge of the patient that he is among his friends and under the care of his family physician, are great aids toward securing that quietude of mind which will hasten recovery." "The methods described in this volume embody the principles commonly accepted, modified in the manner found most convenient for house-to-house operating." This full extract from the preface explains in a concise manner the intent of the author, and he has performed his task well. The book is for surgeons who operate outside the hospital, etc. It is replete with details as to preparation of room, patient, etc., for surgical operations *at the patient's home*. It is a good book for every practitioner of medicine or surgery, and for the nurse as well.

Progressive Medicine. Vol. II, June, 1903. Edited by HOBART AMORY HARE, M. D., Professor of Therapeutics and Materia Medica in Jefferson Medical College, etc. Assisted by H. R. M. LANDIS, M. D., Assistant Physician to Out Patient Medical Department of Jefferson Medical College Hospital. *Surgery of the Abdomen, including Hernia; Gynecology; Diseases of the Blood and Ductless Glands; The Hemorrhagic Diseases; Metabolic Diseases; Ophthalmology.* Lea Brothers & Co., Philadelphia and New York. 1903. Cloth. 8vo. Pp. 437, including index.

The doctor who is not a subscriber to this "quarterly digest of advances, discoveries and improvements" in the medical and surgical sciences" deprives himself of a great help in practice. The general caption of subjects considered in this volume is given in the title above. Under *gynecology*, the review of advances with references to treatment of cancer of the uterus is a treasure in itself. A marked feature with reference to advances consist in the very general uses to which the X-ray is being put, both for diagnosis and treatment of diseases.

Some Elements to be Considered in Urinalysis. A Series of Six Essays. By J. W. CRISMOND, M. D., Anderson, Ind. Paper bound. Pp. 20. Price, 25 cents.

These short essays on the examination of the urine deal with the principal constituents found and are intended as a guide for the detection of the simpler elements.

Editorial.

The Medical Society of Virginia.

The thirty-fourth annual session will be held at Roanoke, Va., beginning at 8 P. M., Tuesday, September 15, 1903. The programme is about ready for issue, from which we note that the annual address to the public and profession will be delivered that night by Dr. Wm. S. Christian, of Urbana, Va., immediately after which the President, Dr. J. N. Upshur, Richmond, will deliver the President's address. During Wednesday morning, the selected subject for discussion—"Diagnosis of Gastric Affections"—will be taken up, the leader being Honorary Fellow Dr. J. H. Musser, of Philadelphia, President of the American Medical Association. It is expected that this discussion will be an important feature of the session. The programme shows in addition the promise of a large number of papers during the session by members and invited guests. The social features have been amply provided for by the local committee of arrangements—Dr. J. N. Lewis, chairman—in which provision is made for the entertainment of the ladies who may accompany the doctors, with the wind up of a banquet on Thursday night. While the number of applicants for fellowship is large, we would urge upon members to see to it that their friends throughout the State who are not yet fellows should at once send in their applications according to forms in the circular announcement of the session.

Richmond Metropolitan Registry for Nurses.

This registry has been established by the alumnae of the various schools of Richmond, and such other graduates, properly endorsed, as have located in Richmond for the practice of professional nursing. Applications for nurses will be answered at any hour of the day or night, and nurses from other cities will be secured for persons desiring them, when the supply is exhausted. Graduates of the following schools are on the list: St. Luke's, Virginia Hospital, Old Dominion, Retreat for the Sick, University of Maryland, Johns Hopkins, New York City, Yonkers Hospital, N. Y., New York Post-Graduate, Philadelphia Lying-in, Philadelphia Woman's Hospital, Petersburg Training School, St. Vincent's, Norfolk, St. Andrew's Training School, Lynchburg. Applications should be made personally, by telephone, telegram or let-

ter to Metropolitan Nurses Register, 108 north Seventh street, Richmond, Va. Bell 'phone No. 2471.

The Wise County (Va.) Medical Association,

Met at Big Stone Gap, Va., July 29th. Dr. H. M. Miles, is president, and Dr. G. W. Tompkins secretary. Dr. M. L. Stallard read a paper on "Summer Diarrhoea of Children"; Dr. G. B. Mabe, one on "Knowledge Required of the Physician of Present Day is Very Great"; and Dr. T. M. Cherry, of Wise, Va., one on "Pneumonia."

Dr. J. Allison Hodges, Richmond, Va.,

Is about to open a private sanatorium in this city specially equipped for cases of nervous diseases, etc. Dr. Hodges has a wide reputation as Professor of Nervous and Mental Diseases in the University College of Medicine, Richmond, of which institution he is also president. Further notice will be given when the institution is ready for patients.

Dr. Robert T. Edes

Has removed to Reading, Mass., but will retain office hours at 419 Boylston street, Boston, on Mondays, Tuesdays, Thursdays and Fridays.

The Memorial Hospital, Richmond, Va.,

Was opened for the reception of patients during the last week in July. In every particular the hospital is well equipped, and the building one of the handsomest in the city.

Treatment of Eczema of Scalp.—*Medical News* says the first measure is to thoroughly wash the scalp with castile soap and water at about 100° F., and then shaving the head. Do not touch the head twice with the same water, nor with pledgets of absorbent cotton used to remove the crusts. Dry the head with a clean, soft towel. A clean pillow case should be used each night. Rigid hygienic measures as to all surroundings must accompany medical treatment. In the case of nursing infants, treat the morbid constitutional condition found in the mother. Such an alterative as iodia is nearly always applicable. Locally, boroglycerine is the best treatment; ethol is also of much value, either diluted or sprinkled upon a thin cap of surgeon's cotton. Renew the cap daily, burning the one used the previous night.

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Original Communications.

THE MODIFICATION OF COW'S MILK FOR ARTIFICIAL INFANT FEEDING.

By W. E. NORTON, M. D., Savannah, Ga.

One of the evidences of our progress as a nation is the increasing importance that is being attached to the care of man in his state of greatest helplessness. The most casual reader, whether he be a layman or physician, cannot fail to be deeply impressed by a glance at the vital statistics of early life. Coming into this world and facing the odds that are against us is indeed a serious undertaking, especially when we remember that so many must succumb before reaching the first mile post on the journey of life. Our prospects of continuing in the race of life are not much brightened until we have passed the fifth post in our life's journey. Dr. L. Emmett Holt, in his excellent work on Diseases of Children, says: "There are three important factors to be taken into consideration when an infant is to be reared—namely, heredity, environment and food." We would not deal lightly with either of these essentials, but presume few will take issue with the statement that to us medical men the question of how best to feed the baby overshadows the rest.

The subject of infant feeding is a most interesting one from many standpoints; the mortality of infancy is alarmingly high, due in many instances to neglect and bad environment, but most frequently due almost entirely to errors of diet, arising from unsuitable food and improper methods of feeding. It is a fact beyond dispute that of all artificial foods for an infant, cow's milk approaches more closely human milk than any other available milk, and should form the basis for a child's food; but even cow's milk must be modified in its chemical properties, or it will prove a poor substitute for the natural food.

It is a deplorable fact that maternal feeding is gradually, but none the less surely, being superseded by artificial feeding. The reasons for this are many, and we fear that the tendency for any change in this state of affairs will never change for the better. The quantity and quality of the milk of many mothers fail to properly nourish their offspring; the demands of modern society prevent others from giving up sufficient time to the nursing of their infants, or to the proper care of their own health, to secure a normal lactation. With a much larger class the failure of the milk supply, and a resort to artificial feeding, is due directly to ignorance and indulgence on the part of the mother; and, secondly, to the negligence on the part of the family physician in not giving the mother proper instructions upon the importance of nursing her infant regularly during the first nine or twelve months, and in the care of her own and the child's health during this time.

The great question is, how shall we begin the process of artificial feeding? The answer is easy. Study nature and imitate her as closely as possible. When we look at mother's milk we see an opaque fluid, having a slightly alkaline reaction, a specific gravity, varying from 1028 to 1031, composed of 13 parts of solids and 87 of water. A further analysis will show that the solids are made up of the following:

Fats	04.
Lactose	07.
Albuminoids	01.50
Salts	00.20
Water	87.30
<hr/>	
	100.00

We must study each of these constituents in order to determine its importance in the combination. The fats encourage the growth of the bones, nerves, furnish animal heat, and are also devoted to storing up fats in the body. The lactose or carbohydrates have two important

functions—the production of animal heat and fat. The albuminoids or proteids stimulate the development of the tissues generally, the cells of the body, the blood, muscles and organs of the body. The purpose of the salts is to stimulate the growth of bones.

A great many attempts have been made by chemists to establish a fixed formula for mother's milk; the results have demonstrated that there is no such thing. Not only does the milk of different mothers vary very much, but also the milk of the same woman has been shown to vary several times during the course of a single day. The formula just given is one that is pretty generally given as a fair average of a good sample of mother's milk. Having learned the value of the various constituents—the fats, lactose, albuminoids, more especially—we learn that the albuminoids containing the casein, existing in the smallest per cent. of the three, are of the most importance, because it is from these that the greatest volume of the body and that which must perform its most active functions are made up. And from the salts, we know that the bony framework of the child is grown and developed.

There are many reasons why cow's milk should be adopted as an artificial food for infantile consumption; not because it is more like mother's milk than that of some other animals, but because it can be had more conveniently and at less expense, and because it is easily modified and made to resemble mother's milk in its chemical and physiological properties. Cow's milk has a specific gravity of 1029, is richer looking—that is, whiter and more opaque—than human milk, and is slightly acid in reaction. Comparing the analysis of human milk with the following analysis of cow's milk—

Fats	4.04
Lactose (sugar)	4.55
Albuminoids (proteids)	4.15
Salts	0.71
<hr/>	
Total solids	13.45
Water	86.55
<hr/>	
Total	100.00

we readily see that the two fluids differ in reaction and specific gravity, and that cow's milk contains more nitrogenous material, but less fat and much less sugar than woman's milk.

The salts of calcium are present in greater proportion in cow's milk, but this difference can safely be neglected, as nature permits of a more generous attitude in the feeding of infants than to laboratory tyrants.

Cow's milk is without question the best material available for the nutrition of the infant when the latter is deprived of its natural food, and any modification that will render this fluid more closely analogous to breast milk is certainly to be recommended on physiological grounds. That there is no difficulty in modifying cow's milk so that it will resemble mothers' milk, both quantitatively and qualitatively, is clearly apparent from the analytical results shown in table* given below. Cow's milk, modified by the addition of Mellin's food and water, offers a product containing to the full extent all of the proximate principles present in human breast milk, wholly free from extraneous admixtures. The proportion of solid matter, fat, albuminoids, carbohydrates, and inorganic salts corresponds as closely as one could ask with what is considered as the average chemical composition of mothers' milk. Further, the process of modification takes into account the radical difference between cow's casein and human casein, and affords a method by which the former can be modified to a closer resemblance to the latter without the addition of any substance that will permanently interfere with the purity of the final product.

The sugars of human and cow's milk are not chemically strictly identical; the fats are quite similar, but there are important differences in the quality as well as the quantity of the nitrogenous material. This in both fluids is complex, being made up of casein, lactalbumin and peptones. Casein is an acid substance present in combination with an alkali, chiefly as potassium caseinate. The casein of cow's milk is readily precipitated by dilute acid and is thrown down in *large, firm masses*; that of human milk requires more acid, and is precipitated in *fine, soft particles*, which dissolve by an excess of acid. This difference can be easily determined by the addition of rennet to the two fluids. In cow's milk the casein is coagulated into *large, firm masses*, while with human milk a *light, loose curd* is formed. In the stomach the acid gastric juice has the same effect, producing in

*See table of ingredients, hours, and intervals of feeding.

the first instance a coagulum *most difficult* to digest; in the other, one of vastly less bulk and *readily attacked and easily broken down* by gastric intestinal solvents.

To overcome these objects Dr. A. Jacobi and the late J. Lewis Smith, and other prominent pediatricists advocate the addition of cereals to cow's milk to aid the infant's stomach in the process of digestion. Acting upon this idea, about two or three years ago I had my attention called to this point, and the value of cereals forcibly brought to my attention in the modification of cow's milk for an artificial food. I was fortunate in having placed at my disposal a supply of Mellin's food—a preparation of cereals which is a soluble, dry extract from wheat and malt, consisting of maltose, dextrine, proteids, and soluble phosphatic salts, prepared after Leibig's well known formula, with such modification as is necessary to meet the physician's requirements, and perfectly free from cane sugar.

After experimenting chemically and clinically for about two and a half years with Mellin's food, the following are the directions I usually give for the preparation of food for a child of six months:

Mellin's food, 3 heaping tablespoonfuls.

Rich, fresh cow's milk, 41 tablespoonfuls.

Water (hot), 20 tablespoonfuls.

This will make food sufficient for a child of six months for the whole day. A child of this age should be fed every two and a half hours, from 5 A. M. to 10:30 P. M., seven feedings of nine tablespoonfuls at each feeding, making a total of two pints of food, which is the proper amount for a child of this age. The food should be prepared as follows: After taking the required amounts of the component parts, food, milk, and hot water—first add the food to the hot water and thoroughly mix, after which the milk is added; when the infant is to be fed, pour out the required amount for one meal and heat in a *clean* vessel until it is warm enough to be comfortable to the mother or nurse, then the food is ready to be fed to the child by means of a nursing bottle, and any food remaining over after the meal should in no case be used for the next feeding, but should be thrown away.

The differences and general characteristics of woman's milk, cow's milk and Mellin's food milk are plainly seen by studying the comparative analysis of the three fluids as given in next column:

Reaction.	Woman's milk alkaline.	Cow's milk acid.	Mellin's Food milk alkaline.
Specific gravity . .	1031	1029	1031
Fats	4.13	4.04	3.10
Lactose	7.00	4.55	6.90
Albuminoids	2.00	4.15	3.00
Salts	0.20	0.71	0.79
<hr/>			
Total solids	13.33	13.45	13.79
Water	86.67	86.55	86.21
<hr/>			
Total	100.00	100.00	100.00

The reaction of woman's milk and Mellin's food milk are both alkaline; that of cow's milk acid. The specific gravity of woman's milk and Mellin's food milk are both the same, while cow's milk falls below. The fat in woman's milk is greater than either cow's milk or Mellin's food milk. The quantity of sugar in cow's milk falls below the amount in both mother's milk and Mellin's food milk. The amount of mineral and nitrogenous matter is greater in Mellin's food milk than in either woman's or cow's milk. The carbohydrate material of mothers' milk, as well as of cow's milk, is composed solely of milk sugar. In human milk the average amount, according to Rotch, is 7.00, while cow's milk shows 4.55. In Mellin's food, the total carbohydrate matter, represented by milk sugar, maltose and dextrine, is not widely divergent from that of mother's milk.

It is to be remembered, however, that maltose and dextrine are foreign substances, not contained in either cow's or mothers' milk, and, while both are possessed of high food value, yet it is equally evident that nature gives preference to milk sugar or lactose as the proper form of carbohydrates for the nutrition of the infant. As we have already pointed out, the casein of cow's milk, when precipitated by the acids of the stomach, is thrown down in a *hard, firm mass*, and when fed to a baby whose digestive organs are made to digest mother's milk, which produces *fine, soft particles*, it is then that digestive troubles arise. The hard, lumpy masses of casein (from cow's milk) that are thrown down by the rennet and acids of the stomach are very difficult for the baby to digest, and it is well to remember that the digestive enzymes act by contact alone. We have in the dextrine and other of the component parts of Mellin's food means by which we can break up the clot and make it more flocculent, thereby increasing the digesti-

bility of the milk; and it is this peculiar characteristic which renders Mellin's food milk so similar to mother's milk, that being alkaline, the curd clots are broken up, so that the digestive enzymes come into close contact with many small particles, instead of a very large curd or clot.

The following table will give explicit directions for the preparation of Mellin's food milk for a child from birth to the end of its first year, with the quantities of Mellin's food, milk and water, when to feed the baby, and how often, and just how much at each meal, the number of feedings during the twenty-four hours, and total quantity:

Age.	Mellin's Food.	Milk.	Water.	Hours of feeding.	Intervals of feeding.	Quantity at each feeding.	No. of feedings & total quantity in 24 hours.
1st to 6th wk.	6 table-spoon-fuls.	14 table-spoon-fuls.	22 table-spoon-fuls.	5 A. M. to 11 P. M.	every 2 hours.	3½ table-spoon-fuls.	1½ pints 10 feedings.
2nd to 3rd mo.	3 table-spoon-fuls.	28 table-spoon-fuls.	20 table-spoon-fuls.	5 A. M. to 11 P. M.	every 2 hours.	5 table-spoon-fuls.	1½ pints 10 feedings.
4th to 6th mo.	3 table-spoon-fuls.	41 table-spoon-fuls.	20 table-spoon-fuls.	5 A. M. to 10 P. M.	every 2 hours.	9 table-spoon-fuls.	2 pints 7 feedings.
6th to 8th mo.	4 table-spoon-fuls.	56 table-spoon-fuls.	18 table-spoon-fuls.	7 A. M. to 10 P. M.	every 3 hours.	13 table-spoon-fuls.	2½ pints 6 feedings.
8th to 10th mo.	5 table-spoon-fuls.	65 table-spoon-fuls.	20 table-spoon-fuls.	7 A. M. to 10 P. M.	every 3 hours.	14 table-spoon-fuls.	2¾ pints 6 feedings.
10th to 12th mo.	6 table-spoon-fuls.	80 table-spoon-fuls.	16 table-spoon-fuls.	7 A. M. to 10 P. M.	every 3 hours.	17 table-spoon-fuls.	3¼ pints 6 feedings.

The object to be accomplished in the modification of cow's milk for an artificial food is to prepare a fluid which will resemble human milk as nearly as possible in its chemical composition and physical properties. To do this, it is necessary to reduce the proportion of albuminoids, to increase the proportion of fat and sugar, and at the same time to overcome the tendency of the casein to coagulate in large, firm masses after entering the stomach and coming in contact with the gastric juices. All this can be accomplished by observing the proportions as outlined in the table above, using cow's milk, Mellin's food and water.

Below I append a few clinical reports and the results obtained from this plan of feeding, using cow's milk modified as outlined above:

Case 1.—Female infant of premature birth; weighed 6½ pounds at birth. This baby was

well and strong at birth, considering it was premature; it was nursed for a few weeks, when for some reason the mother decided to give it an artificial food, whereupon it was placed upon a diet consisting of a mixture of cream, milk and water. The nurse in charge said that the babe was satisfied with small quantities of the food suitable to its age. When three weeks old it took six ounces of this food at each meal and nursed on an average of every two hours. During its second and third months it gradually developed symptoms of indigestion, and a physician was called, who prescribed for the little sufferer from time to time, until it was five months old, when I was called to see it.

At this time it was having frequent and prolonged convulsions. At times, when in convulsions, it would fall into a state of collapse; the pallor of face would be extreme, and look as if the little patient would soon be relieved from its suffering. On careful examination, it was found to have a very large, distended abdomen, especially in its upper part; the stomach was largely dilated, gastric tympany was marked, easily mapped out by percussion. Thorax was normal. Percussion showed the dilatation to extend below the umbilicus, and far to the left of the median line. The diet was changed to modified cow's milk. The food was ordered for a child one month younger than our little patient in order that its digestion would not be overtaxed. For the first week it cried for more food at each feeding; the convulsions soon began to grow less severe, and at the end of about six or eight days had ceased, and at the end of one month there was a decided improvement in its general condition; the dilatation had subsided very markedly, and the infant had become tranquil; from this time on there was no recurrence of the symptoms. The food was changed as the child grew older, and at the age of ten months the dilatation had entirely disappeared, and the child went on through the remainder of nursing period without further annoyance, and now, at the age of twenty months, is a well, healthy baby, weighing twenty-two pounds.

Case 2.—L. S., aged six weeks; mother died during the puerperum; baby was brought to me from an adjoining State, accompanied by the wet nurse since its mother's death. Nurse is a strong, healthy woman, having a splendid baby of her own, which is cared for largely on condensed milk; still, the orphan baby does not

thrive. The cause for this could not at first be ascertained, but after a while it was found that the wet nurse was dissipated, especially as to drink, to which she was addicted. She was at once dismissed, and the baby's diet changed to cow's milk modified as per table of quantities, hours and intervals of feeding for a child of six months. After about three weeks there was a noticeable improvement in the child, and it began to grow, and from this time on there was no trouble with the baby except from disorders of its bowels, which soon yielded to appropriate treatment, after which the baby was well again, and continued to take modified milk during the remainder of the nursing period. When weaned, at the age of fifteen months, the little girl weighed seventeen pounds, and was well developed for her age.

Case 3.—Mrs. G.'s baby; male; weighed 7½ pounds at birth. It appeared to thrive fairly well for the first few weeks, but owing to the failure of the mother's health, due to protracted malarial fever, the quantity and quality of the milk became unfit for nourishment of the baby; he was put on cow's milk, which, after a time, set up disorders of digestion, resulting in trouble with the bowels before I was called. When I first saw the baby he was suffering with the usual train of symptoms accompanying intestinal indigestion. His diet was at once changed to modified cow's milk, as per table of ingredients, hours and intervals of feeding for a child of two months. After three weeks, decided improvement was noticeable; he was kept on this food, changing the quantities of ingredients as the child grew older. He was soon restored to health, became playful, slept well, and the intestinal indigestion gave no further trouble. At the end of twelve months he weighed sixteen pounds, and from this time on there was no further trouble during the nursing period.

Case 4.—Age six months; weighed at birth eight pounds. Mother (a pale, anemic woman) furnished a small supply of poor milk, upon which the baby fed for the first two months. At this time another physician put the baby on some form of artificial food, which it continued to take for two months; on this the baby did not thrive. I first saw this child at age of six months; baby was pale, thin and flabby, the process of athrepsia being already established; emaciated; weighed only twelve pounds.

He was at once placed upon an artificial food,

as outlined in table giving quantities of ingredients, hours and intervals of feeding for a child six months old. Baby at once began to increase in weight and to grow strong from the day diet was changed. The summer season came on about this time, and baby, with its mother, went to the country.

At the solicitation of relatives, the baby was given table food. In a week's time baby returned to the city with acute diarrhœa, which lasted for more than two months, and from which it went through a slow and tedious convalescence, lasting two months. The food was increased to meet the changes as the child grew older.

At the age of ten months the child was regaining its former vigor. At the age of one year it had entirely recovered, was well, fat and hearty, weighed twenty-three pounds. The food was continued.

The baby is now a year and a half old, weighs thirty pounds, has been weaned, and seems in excellent condition for the approaching second summer.

Case 5.—James, the son of Mrs. Y.; at birth was a fine, healthy boy, weighing ten pounds. Mother strong, healthy woman, who had nursed her former child successfully. At the age of two months the baby was not thriving well; the mother's milk was not of normal quantity and quality to properly nourish the child; various foods and medicines were tried to improve her milk, without avail. At the beginning of the third month baby weighed only twelve pounds. I ordered him placed on modified cow's milk. (See table giving quantities, hours and intervals for feeding a child three months old.) He began at once to improve and grew rapidly. The food was continued, gradually increasing ingredients in composition as he grew older; he had no trouble of any nature except an inclination to constipation, which was relieved by the use of infant's glycerine suppositories. The child is now thirteen months old, has six teeth, and weighs thirty-one pounds, and is a perfect picture of health.

Case 6.—Infant prematurely born at thirty-third week of pregnancy. At birth the child weighed 6½ pounds. This case illustrates the fact that a premature infant, if its weight is extremely small and its development about the average for its age, will live and thrive, provided certain precautions are taken for its preservation. The infant was placed in a room

where the temperature was constantly kept at 75° F. The air immediately surrounding the infant (which was kept in a basket) was heated to about 85° F., the infant being wrapped in fresh absorbent cotton. The infant was fed with breast milk from a spoon for a week, and then allowed to take the breast, and continued to nurse from nature's fountain until the end of the third week, when the supply suddenly failed. Then it was placed upon a substitute food, whose chemical and physiological properties closely resembled mother's milk. This being a weak, premature little fellow, it was placed on modified cow's milk, as shown by the table above referred to, giving quantities of ingredients, hours and intervals of feeding a child one week old. The diet was just the thing, as the child grew rapidly, gained in strength, and stools showed no evidence of undigested casein. There is nothing especially interesting to record within its history or physical condition except a small umbilical hernia, which did not cause any discomfort, and which closed at the end of the third month. With attention to its warmth and food regulated as it grew older (as per table), it thrived as any infant at term would have done, and is now a well, healthy baby, 18 months old, and weighs 21½ pounds.

Case 7.—Infant born at term; weighed seven pounds. Mother sporting character, who did not want to nurse her baby, but upon my advice put baby to breast and nursed it during my attendance (I do not know how much longer). When it was eight weeks old I was called to see it. At that time it was in charge of an old lady, who was taking care of it. Its diet had been cow's milk. Its bowels were giving trouble, cow's milk producing a coagulum, which the digestive enzymes of the baby's stomach could not break down. The child was fretful, peevish, emaciated, rachitic, and a severe gastro-enteritis was present, which was controlled by tannopine and change of diet. Modified cow's milk prepared by adding water and Mellin's food in the proportions as shown in table giving quantities, hours and intervals of feeding. The infant apparently improved for about one week, when the gastro-enteritis suddenly grew worse. Under appropriate treatment, however, it was controlled, and baby again began to improve, and continued to do so. The food was increased, as outlined in table referred to, as baby grew older, and now, at the seventh month, the baby is grow-

ing and gaining flesh and strength, has one tooth, and weighs twelve pounds.

Case 8.—Baby one month old; well developed at birth, weighing eight and one-half pounds. Mother nursed it two weeks, when quality of milk, as well as quantity, were both wanting. Mother died from puerperal fever on the twenty-fifth day. The poor quality of the milk had begun to tell on the child before it was taken from the breast; as a substitute diluted cow's milk was given by the nurse. After the death of the mother my attention was directed to the child. It had gained but very little since birth. I at once ordered an artificial food, as shown by table previously referred to, allowing quantity as indicated for a child of its age, and baby gradually began to show signs of improvement; the dejections indicated that the food was being digested. The baby was soon growing plump and fat, sleeps well, and has no trouble.

Case 9.—Infant three months old. Nurse gives history of having fed it on various foods containing starch in various combinations with cow's milk from its earliest months of life. The nurse said it was healthy at birth and of average weight, seven and one-half pounds. When presented for treatment, boy weighed five and three-quarter pounds, was extremely emaciated, approaching the advanced stage of infantile atrophy; was suffering from a slight gastro-enteritis, it was unable to raise its head, its skin was cool and dry, its respirations were shallow, its pulse weak, and its temperature slightly subnormal. It looked as though it would not live many days. A physical examination did not reveal any abnormal condition. The fecal movements were rather large and contained undigested coagula. The infant was placed on modified cow's milk, in the proportion as laid down in table giving proportions, hours, etc., and intervals of feeding. After one week on this food slight improvement was noticeable, it began to gain in weight and to absorb its food, as the dejections were free from casein. Although this child had a number of relapses, at the end of six months' treatment it was fully recovered, and weighed thirteen pounds.

Case 10.—Male infant, robust and well developed; at birth weighed eight and three-quarter pounds. The mother not being able to suckle infant, and the danger of artificial feeding in the warm months (July particularly) being well understood, a wet nurse was pro-

cured. About ten days later this wet nurse, having insufficient milk, another was procured temporarily, who nursed the infant about four weeks, when a third wet nurse was procured, whose child was healthy and thriving, being about six weeks old. Before dismissing the second wet nurse to all outward appearances child was doing well. Four days after commencing to suckle the third wet nurse the infant developed thrush, mild in type, which yielded to appropriate treatment. This illness upset the infant's digestion, and diarrhœa was the result; yet the baby recovered, but was weak and fretful. The diet was now changed to modified cow's milk, prepared as per table referred to. After being on this diet for one week signs of improvement were noticed. Nothing of importance occurred from this time on except a summer diarrhœa, which was soon relieved and proportions of food changed as child grew older. The child is now nine and one-half months old, weighs sixteen pounds, and is as hale and hearty as any breast-fed boy.

BIBLIOGRAPHY.

- Chapin*.—Amer. Jour. Obstet. and Dis. Women and Children.
Starr.—Diseases of Digestive Organs of Infancy and Childhood.
Holliday, in Pediatrics.
Keller. Centralblatt für inner medicin.
Keating.—Diseases of Children.
Oppenheim.—Diseases of Childhood.
Heubner.—Berliner klinische Wochenschrift.
Rotch, in Pediatrics.
Hamilton.—Amer. Jour. Obstet. and Dis. of Women and Children.
Smith.—Diseases of Children.
Williams.—Diseases of Children.
Leeds.—American Text Book of Diseases of Children.
Crittendon.—N. Y. Med. Jour. and Dietetic and Hygienic Gazette.

its vital importance. The tombstones, monuments and stoneless graves of the potter's field are often the silent witnesses or signboards along life's pathway, from the clinical or surgical amphitheatre or private bedside to greet us only in the bourne from whence no traveller e'er returns.

Often the autopsy reveals our mistakes in diagnosis. Years ago while connected with the railroad service, we received this notice from the president: "Make a careful and thorough autopsy of the patient and report same to me." She had been under the care of several first class surgeons and physicians, all of whom failed to diagnose her trouble. She was said to have suffered from cancer of the stomach, spleen, pancreas, liver, etc. Several surgeons and physicians were selected to make the autopsy. As we entered the death chamber we said: "Each of you take a slip of paper and note what you expect to find, and on the other side what you do find, and compare notes, and the deponent will do the same." After a careful examination from the occipito-frontalis to the plantar fascia we found but little that we expected, and a great deal we did not expect. While the incision showed a superabundance of adipose tissue, we found she had succumbed to general caseous degeneration. We went away humiliated, but wiser and with greater respect for dame nature and her ills.

Incorrect diagnosis is erecting a pyramid taller than that of the Cheops and Sphinx of Egypt, and cry out to heaven to shield the viscera and organs of the human body from the merciless scalpel of the surgeon and the nauseous nostrums of the pill giver, who have grown so bold as to accuse the Creator of useless material in the appendix, and dispute with Him its function. What a farce! They would put to shame a Budley, Gross, McDowell, Drake or any of the illustrious of the past. All honor and praise to such men as Senn, Koch, Virchow, Prewitt, French, Bryson, Griffith, Hall, Cardier, Pierce, McAllister and Moss, who teach students to respect every tissue of the body, and teach the useful functions of every organ, while Pearse, by practice, teaches to save the circulation by avoiding useless incision, etc. We deal not in vain imaginary pictures; we speak not of the imperfections and frailties of the present and past; we confine ourselves to facts as they exist, and they cry out a halt and enter a plea for correct diagnosis. We need to cultivate

IMPORTANCE OF CORRECT DIAGNOSIS.*

By C. W. WATTS, M. D., Fayette, Mo.,

Secretary and Treasurer Howard County Medical Society, etc.

When we consider our failures, our chagrins and our personal mortification often experienced by even the careful and painstaking physician and the astute up-to-date surgeon, we are impressed with the very great *importance of a correct diagnosis*. Only the superficial or ignorant charlatan or would-be surgeon fails to grasp

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daily a knowledge of physiology and pathology. We need to study and respect every tissue of the body, both normal and morbid, in sickness and in health. We need to form our diagnosis upon facts as they exist from physiological and pathological expressions. We need to cry down and punish criminal neglect and ruthless carelessness, and have compassion on those who should have been stopped, by a timely word of teacher or practical hint from preceptor from entering the medical profession. Let the whole intellectual field be illuminated and discovered by the X-ray of truth, fidelity and charity.

Experience teaches that our hind sight is far ahead of our foresight, and that the slides of our microscope, telescopes, media, etc., are often clouded by the visual field of ptomaines of bigotry, egotism and culpable ignorance, which are the practical cultures of neglect in pathological study and morbid anatomy.

One diagnostic fact is worth a whole world of suppositions and erroneous deductions of an imaginary cranial igni fatuus or lusus nature. You will never graduate as diagnosticians—always room for improvement and reflection. Many of our experts are but excrescences found on the corporeal corporosity of the medical profession—phagocytes who feast on the ignorance and credulity of the jurors and jurists of the country.

We are not entirely at sea as to means of correct diagnosis. We have yet the old rule of finding out what is not the matter with the patient, *by exclusion*. We have the microscope, endoscope, phonendoscope, urinary analysis, with explorative incision as aids to a correct diagnosis. History of the case, as a rule, is a great assistance. We owe a great debt of gratitude to DaCosta, Loomis, Guerster and Senn as diagnosticians. We will yet have men whose diagnostic power in the old world will interest us, as those of Virchow, Koch, Mueller and others have already. The twentieth century will not have accomplished its mission until legal legislation will make it criminal on the part of any surgeon or physician for the performance of any operation or the giving of any medical treatment, until all means of modern diagnosis have been used. Each year marks progress and advancement along these lines. As surgeons and physicians, we should study more and experiment less; we should respect the voice of nature in disease and health, and we

should not forget that we at best are but the handmaidens of nature, without power to create a single tissue or fibre and fraught with power to destroy a good many. Success crowns the efforts of every honest investigator of diagnosis, while pathology and anatomy are his assistants. He sleeps with a clear conscience. Judgment and experience enter largely into a correct diagnosis.

The imperfections, frailties, infirmities of the present are often the result of neglect of the accurate means within our reach. Haste makes waste. We need to call a halt to unnecessary haste, and taking too many things for granted.

Experience, both clinical and theoretically practical, teaches that there are surgeons and physicians who are entirely, or nearly so, destitute of diagnostic power. Unfortunate they are, and we say it in the spirit of love and sympathy for them. The responsibility rests largely upon the teacher, and back of him the preceptor, of the young esculapians. They should refuse to instruct such pupils in the healing art. We have known physicians, who, in the office or lecture-room, could give a glowing, fresh, accurate and correct account of typhoid fever, and its most approved treatment, who, at the bedside, could not tell the difference between a case of scarlet fever and diphtheria, or typhoid fever from continued malarial fever, to save their lives. We have seen surgeons dip into the abdominal cavity for a diseased appendix and found it in its maiden's blush with all its roseate tints, etc., when just above was a duodenal ulcer or a suppurating sac or duct.

"*Haste makes waste*" is as true as "be sure you are right and go ahead." After a successful operation in an important case of exophthalmic goitre, in which the entire thyroid had been removed, and the patient recovered without any myxedema, a young surgeon said to the deponent: "I would give thousands for your judgment and diagnostic power." We replied: "Wait ten years and study pathology, histology and your subjects well, and you will be possessed of a superior one; for you have the dexterity and natural qualifications to stand at the top." It is needless to add that *that* surgeon and physician has no superior to-day in Missouri and but few equals. He does his work well. He uses *correct diagnosis*, and he is regarded as a safe and conservative surgeon, and when the deponent is sick he wants his colleague beside him.

In this progressive age—this practical age—let not the love of money and large fees supplant the place of grey matter and ordinary common sense in an uncommon degree.

Diagnose your case correctly before you proceed to mutilate your patient or set up an awful bellyache before you find out what is the matter with your suffering subject. And may you succeed with great success!

Twenty years ago we knew a young mesoblast, fresh from his alma mater in a western city that has more colleges than her sister city (which is ten times as large) and who has more teachers who need teaching than any other city of its size in America. This young mesoblast had been impressed by such teachers that what he did not know was not among the "knowables." After his return home, with his laurels and surgical instruments, he was called to see a case of enteralgia in a stout, robust, plethoric subject. He diagnosed appendicitis of a violent form, and without consultation or advice from any professional brother, he made his *incision* and pulled out the intestine and found all in perfect health and the appendix normal and in statu quo. He attempted to return the intestine and failed, until he called in a retired surgeon and physician, who accomplished the task for him, and his patient recovered. But he did have sense enough to seek a new vocation in life for the sake of poor humanity. It's a great pity many others do not follow his example.

When attending the great Wills Ophthalmic, thirty years ago, we saw a matriculate who had come to the great eye school with quite a reputation as an eye surgeon. The immortal Levis requested him to diagnose a case of eye trouble. After a careful examination of the eye with ophthalmoscope and illumination, he said: "Why, Professor, this is as fine an eye as I ever looked into; *it's perfect* and I cannot detect a fault." "No, sir," replied the grand Levis, "but you happen to be looking into a glass eye introduced by me yesterday. It is a perfect glass eye and rests upon a healthy stump." He removed it and showed the matriculate that what he did not know was worth learning. It cut that fellow off at his knees, and he commenced at the foundation and built up a fine reputation and made a successful oculist in after years. Had not Dr. Levis removed his hoodwink he would have perhaps ruined another half bushel of eyes, as he had boasted in the past.

We knew another doctor who, after a six weeks' course in a western polyclinic, undertook to remove an immature cataract from the left eye. He emptied the entire globe, both anterior and posterior chambers, and had a hemorrhage that came near proving fatal to the poor young man. He had the *sense* to *quit* his profession and take up with a travelling medicine man afterwards at a larger salary, and we prevailed on the young man not to sue him for malpractice. The eye was not cataracted, but the *young wasp* had reflected on his retina the eye of some case he had seen in the polyclinic.

Not long since a gentleman who had been sick for two years with what several doctors pronounced gall stones, went to a city with his doctor to consult a laparotomist. His doctor did not believe he had them, and the operation revealed effects of opiates and some morbid adhesions. Any pathologist or anatomist or surgeon of any experience will tell you that very many men carry these morbid adhesions through life, die of old age and only reveal them at the autopsy. Unfortunately, for the human family, this *morbidity* is not always confined to the abdomen of the patient, but is more often found in the white and grey matter of the operator.

Once upon a time we were called to a lady—the wife of Mr. J., and the mother of three bright children. We were told she had a half dozen diseases and needed several surgical operations, and she had sent for her pastor and parents, and they held prayers over her and she gave the children to her mother; then they sent for the undersigned, stating that she could live but a few hours. She had two good physicians and one fair surgeon. All had diagnosed her case and done all they could, and a great deal more that they ought to have left undone. She had been accused of having everything but appendicitis. One surgeon suggested a laparotomy, another a vesicotomy, another a lithotomy, and still another hysterectomy, while one of her good doctors suggested a *dilatotomy* and attempted it. Poor creature, how we sympathized with her in her manifold misfortunes, maladies and *would-be prognosticators*, and we felt sorrier for her and her good doctors and poor mother and husband than for any one else. We excluded all of her friends and kindred and with her doctors we made a careful physical examination, and with the aid of phonendoscope, stethoscope, pelvoscope, urethroscope, X-ray and endoscope, with microscope and

macroscope and dilators, with a careful differential diagnosis of discharges, excretions and urinary analysis and forty-eight hours of close office study, we diagnosed her trouble to be renal calculi, with subcaseous deposits as a typhoid sequelæ to renal parenchymal, nephritis of right kidney and ureter, and suggested a preliminary treatment, followed by right ureter dilation, with a subsequent right nephrectomy, if necessary, to follow with flaxseed and buchu tea, carbolated with glyco-thymoline and followed by a uric solvent and Lambert's lithiated hydrangea, with carb. guaiacol with a good and wholesome diet, and let Dame Nature cure her in six weeks as sound as a gold dollar. Our suggestion was acted on, we took from her a cap box full of oxalic stones and healed the nephritic tissue with ginseng and juniper, backed up with port wine and a wholesome diet. She *recovered* entirely in eight weeks and invited us to a big dinner of 'possum, ribs and sweet-potatoes. We called in the pastor and he held prayers and she enjoyed life again with her husband and children, and just over the right kidney was a cavity, which would hold an ordinary half hand, over which she wears a well adjusted kidney pad. Her health ever since has been most excellent, and there were no complaints to make, only against two of the druggists for refusing to sell her husband some medicines.

All hail and honor the progressive, wide-awake surgeon of to-day who refuses to be lured into operating on any man until his judgment and diagnostic powers are fully exercised and his explorative *incision verifies* his correct diagnosis. Thank God for a grand physician, who, while he has not the tact of a surgeon, yet has sense and judgment enough to form a correct diagnosis, and not yield his patient to one of those anxious mesoblasts who is only seeking for development, notoriety and pomposity, who already has no respect or regard for human life.

Correct diagnosis requires not only judgment and common sense in an uncommon degree, but also foresight, prudence, caution and decision of character, ever ready to learn and be taught, and to improve on every occasion his present attainments.

CASE OF ONLY ONE KIDNEY.

By JOEL CRAWFORD, M. D., Yale, Va.

On Tuesday afternoon, April 19, 1903, Mrs. J., age 62 years, ate some walnuts and that night she partook of a rather sumptuous supper and retired. During the night she had a rigor, followed by a decided elevation of temperature, general muscular pains and gastrointestinal disturbance; but the next morning she arose, as usual, and resumed her domestic duties. Soon afterwards, however, she had to retire and remained in a more or less pronounced stupefied condition during the day. During the night another rigor recurred with the succession of increased temperature, etc., as on the night before.

On Thursday morning I was called to see her and made out a diagnosis of bilious dysentery—there being quite a number of cases of this disease in her neighborhood at that time.

The usual remedies for the relief of this condition were administered and persevered in until Monday morning, but as no appreciable benefit resulted, Dr. O. C. Wright, of Jarratt's, Va., was called in consultation.

On his arrival, owing to a more or less collapsed condition of the patient, normal saline solution was administered subcutaneously in the left pectoral region. A sample of urine was also obtained by catheterization, which promptly responded to the tests for the presence of albumin. A few hours later the lower bowel was thoroughly irrigated with normal salt solution.

Apparent improvement, lasting for a few hours only, was followed by a profound comatose condition, and the patient died about 7 o'clock Wednesday morning.

About sixteen years ago I was called to this same patient, when my attention was directed to a tumor in her left iliac fossa. Presuming that it was a neoplasm of the left ovary, I suggested its surgical removal, but as it was not giving her much pain or trouble she hesitated to go to a hospital.

After a few years this tumor disappeared, but during her last illness she complained much of severe pain in the left iliac region and all the while she said that the old tumor was again giving her a great deal of trouble. But on full physical examination neither Dr. Wright nor could I make out any outline of a tumor of any kind. She often requested me to hold a post-

mortem and examine that "growth," as she called it.

After death Dr. Wright opened the abdomen by an incision in the median line, extending from just above the symphysis pubis to a point near the xiphoid appendix, or the ensiform cartilage, and a thorough examination, lasting for more than an hour, was made of the abdominal contents. This autopsy revealed the presence of a large cicatrix on the lower end of the left kidney, which organ was of unusual size. It was a very large "white kidney," *and the only kidney she possessed.* After a most painstaking and thorough examination no trace of a right kidney nor its renal vessels, nor could a right ureter be found.

Some portions of the border of the spleen were thickened and indurated, but otherwise that organ was in a good, healthy condition. I am now of the impression that the tumor observed in the left side years ago was a growth issuing off from the left kidney.

We have reported this case as briefly as possible, thinking that it might be of interest to the profession to add the report of one more case of the existence of only one kidney in a human being who had attained the age of 62 years without any evidence during her lifetime of such an abnormality.

THE ETIOLOGY AND PATHOLOGICAL ANATOMY OF ANEURISM.*

By W. LOWNDES PEPLE, M. D., Richmond, Va.,
Professor of Histology, University College of Medicine.

Before opening the subject of aneurism, let it be remembered that in spite of the various divisions and sub-divisions of the wall of an artery, it is built of but two elementary tissues, endowed, so far as our subject is concerned, with but three functions. The involuntary muscle lies in the middle coat, and under the influence of the sympathetic nerves controls the vessel calibre, thus, under usual conditions, maintains a uniform blood pressure. In the fibro-elastic tissue reside the other two functions. The yellow fiber is an elastic cushion, upon which the force of the heart beat falls, rendering an intermittent stream continuous. Of the white

fibers is woven a resisting wall to stand guard lest elasticity be overtaxed or contractility should fail.

In the walls of the large arteries there is relatively little muscle and much elastic and fibrous tissues. As a consequence, in the variations of the general vascular capacity, these greater trunks bear but a small part.

In a paper of this scope, it is deemed best to avoid the discussion of the circoïd aneurism, the false aneurism, the aneurismal varix and the miliary cerebral aneurism, giving the time to the common varieties met with in the larger vessels.

A true aneurism is a permanent circumscribed dilatation of one or more coats of an artery. There are three varieties of aneurism: the tubular or fusiform, the saccular and the dissecting aneurism.

A tubular aneurism consists of the dilatation of all the coats of an artery involving the entire circumference for a greater or less extent.

A saccular aneurism is a sac-like dilatation upon the side of an artery or upon a tubular aneurism. This never retains all three coats if the sac attains a considerable size.

A dissecting aneurism is one in which the blood makes its way between the coats of the vessel, dissecting them apart and making there an abnormal space. This latter condition is rare.

Aneurism occurs in a previously diseased large artery of a man past forty, who is subject to violent intermittent muscular exertion. Aneurism occurs in man because his occupations are more laborious than those of woman. It occurs in middle life, because, while this is the age at which degenerative changes begin, he has not discontinued the heavy, laborious work of youth.

It occurs in a large vessel by reason of its structures, for the bulk of the wall is composed of connective tissue, which is especially prone to degenerative changes, and the muscular tissue which might supplement the elastic is here very scant. It occurs in a large vessel by reason of its anatomical location, for the great trunks not only bear the brunt of the heart beat, but they also lack the sturdy support of muscle, bone and tendon enjoyed by vessels elsewhere.

The occurrence of aneurism in a healthy vessel, unless one or more of its coats be mechanically severed, is so rare that it scarcely need be mentioned.

*Read before the Richmond Academy of Medicine and Surgery, July 28, 1903.

There are certain constitutional diseases and conditions—namely, syphilis, gout, rheumatism, alcoholism, etc.—which are accompanied by changes within the vessel wall which may be said to precede aneurism. These changes consist either of a softening of one or more of the coats, which allows dilatation to take place at the diseased area, or a hardening, which destroys the normal elasticity, and by throwing the strain elsewhere, gives rise to dilatation.

Atheroma, a rather vague term used to denote a local softening, seems to have for its direct cause the obliteration or plugging up of one of the vasa-vasorum. There is first a round cell proliferation in the intima, which forms a whitish patch and projects as an elevation in the lumen. Fatty degeneration and finally disintegration takes place in the cells, and an atheromatous ulcer is formed.

Gumma, the tertiary syphilitic lesion, is followed by softening similar to atheroma. Where isolated, calcareous plates slough into the lumen, and a vulnerable point is left.

Arterio-sclerosis predisposes to aneurism by destroying the elasticity of the vessel wall. It consists of a marked increase of fibrous tissue of both intima and adventitia, and, to some extent, of the media, which undergoes more or less contraction. Robbed of its elasticity, the vessel wall gives way in some weak or less affected point.

Calcareous degeneration, when involving considerable areas, may give rise to aneurism. Where the entire circumference is involved in a chalky cannula, for instance, there would be undue tension at the mouth of this tunnel. The causes enumerated may act singly or together. Syphilis, by many authors, is claimed to be a most fruitful source of aneurism.

Of direct injury as a cause, it may be mentioned that with the advent of the modern high velocity small calibre projectile, there will doubtless be more true traumatic aneurisms, for these bullets cut the outer coats like a knife, and allow hernia of the inner to take place.

Microscopic section of an aneurismal wall would, of course, vary with each case, and would present the normal tissues greatly infiltrated and stretched, with external fibrous thickening of the adventitia, which is frequently amalgamated to all surrounding structures. The interior of the sac, especially if its orifice be small, contains a lamellated deposit of fibrin on the intima.

Having weakened the wall and provided an exciting cause, I now leave it to my colleague, who is to follow, to say whether or not my patient has developed aneurism.

CONCERNING THE SYMPTOMATOLOGY OF THORACIC ANEURISMS.*

By TRUMAN A. PARKER, M. D., Richmond, Va.,
Instructor in Physiology, University College of Medicine.

We all know that an aneurismal tumor of the ascending arch will present a train of symptoms differing somewhat from those consequent upon a tumor in the course of the descending aorta. But I shall leave to the professional diagnosticians the localization, symptomatology of this condition, and speak of the symptoms arising from an aneurism of the aorta, in the thorax, in a general way. As to the general practitioner, his overcrowded mind does well to maintain a clear conception of the varied and numerous lesions which may be caused by an aneurismal tumor of the thoracic aorta. He knows that treatment is practically the same.

Personal observations, apart from the experience of others, has forced upon me the conclusion that many a patient has received anti-rheumatic, anti-neuralgic and anti-bronchitic treatment, *ad libitum*, because he was innocent enough to carry a thoracic aneurism engendering pressure symptoms. It is my earnest hope this evening to obtain mental entertainment on the part of some of my hearers for the idea of thoracic aneurism in any condition where intra-thoracic pressure symptoms are manifest, or the physical signs enumerated below present themselves.

You will doubtless be impressed by the undercurrent of doubt and uncertainty which permeates this reading. It must needs be so. The symptom complex of this condition is as varied in degree as it is in character. It is in recognition of this fact that Bramwell, in classifying aortic aneurisms, gives first place to "those which are entirely latent, giving no physical signs"; and again, "secondly, those giving signs of intra-thoracic pressure, but in which the nature of the cause cannot be ascertained"; and thirdly,

*Read before the Richmond Academy of Medicine and Surgery, July 28, 1903.

"those which form distinct tumors and give well marked pressure symptoms and external signs." Let us, then, not postpone the consideration of aneurism until there appears a pulsating distensible tumor in the neighborhood of the upper portion of the sternum, associated with intense, boring, aching pain. Such manifestations are the concomitants of thoracic aneurism in a limited number of cases only.

The tumor may project posteriorly; it may ulcerate into the œsophagus, a portion of the respiratory tract, the pericardium, and even into one of the great veins of this region. Bloody expectorations, then, may be due to nothing more or less than an aortic aneurism. Musser speaks of a case coming under his observation, which had been treated for pulmonary tuberculosis. This treatment was based upon the following symptoms: emaciation, fever and loose cough, with bloody expectorations. Autopsy revealed aneurismal tumor rupturing into the bronchus, which it had previously occluded, causing bronchiectasis, etc.

Nor is pain, which it is well to remember as a very constant symptom, always of the same character. At times, it is sharp and lancinating, occurring in paroxysms. Again, it may be anginal in character, or neuralgic, extending down the arm into the neck, or along the course of the intercostal nerves—symptoms of nerve pressure from the growing tumor. Tracheal tugging, or Oliver's sign, is another well remembered symptom of this condition, but in recalling this sign, which is only present when the tumor presses upon the left bronchus as it passes under the arch, or when it is adherent to the trachea, we are prone to forget dyspnoea and dysphagia from pressure upon the trachea and œsophagus.

So, too, we are familiar with the "brassy cough," paroxysmal and ringing in character, laryngeal in origin, and dry, due to pressure upon the recurrent laryngeal nerve. But we ignore the irritative, hacking cough, with thin, watery expectoration, resulting from pressure upon the trachea proper; or the loose cough, with copious, ropy discharge, when a bronchus has been compressed and bronchiectasis, with fever, has set in. Pressure upon the recurrent laryngeal may also produce dyspnoea, with stridor, aphonia, hoarseness, and "a peculiar monotone and inability to reach high note," due to paralysis of one or both vocal cords—not that this entire train of symptoms is always

present when the laryngeal nerve is compressed. There is often no other symptom save the brassy cough. There may be some other *one* symptom—e. g., Moritz Schmidt has reported a series of fifty-four cases, in all of which the patients first consulted him on account of *hoarseness*. Thirty-eight showed paralysis of the left cord, the one most frequently involved. In one case both were involved.

Occasionally the tumor will encroach upon the thoracic duct, causing inanition and wasting, which may divert one's attention to phthisis. Again, it may partly occlude one of the venæ cavæ, with resulting engorgement of the head, neck, thorax, etc., perhaps with edema. Occasionally there is seen clubbing of the fingers of one hand with incurvation of the nails and congestion, due to venous engorgement.

The sympathetic system has a minor role in this symptomatology. Pressure-irritation gives dilatation of the pupil on one side, with palor, while pressure-paralysis results in pupillary contraction and hyperemia. Unilateral sweating is sometimes present.

The physical signs are most varying in degree. We have noticed that they may be altogether lacking. On the other hand, they may be most pronounced. Not infrequently inspection reveals a pulsation. It may be slight and without visible swelling, or marked, diffuse and heaving in character. When present, it is synchronous, with the cardiac systole. There may be a pronounced tumor, with ulcerating skin and slight leakage. These signs are chiefly found above the third right rib and to the right of the sternum, sometimes to the left, sometimes over that bone. Pulsation is quite often noted in the supra-sternal notch, or above the clavicle when the innominate is involved. The apex beat is displaced downward and to the left. It is frequently heaving in character.

Palpitation should be performed thoroughly, single handed and bi-manually, on full inspiration and full expiration. Usually, the tumor when appearing externally, is hard and non-expansile from fibrinous deposit. It may be soft and compressible. Thrill, systolic in time, may be present; also a diastolic shock, which, when present, is diagnostic.

Percussion furnishes very reliable evidence when the tumor is not too deeply seated or small in size. Accordingly, dullness is obtained in varying degree. When the tumor is superficial, it may yield flatness, or relative dullness only

may be obtained. It is usually found on either side of the sternum and over the same; sometimes in the left interscapular region. Percussion both in the upright and in the recumbent posture should be performed. The occurrence of severe paroxysms of coughing or the complaint of pain while percussing the anterior chest, Eichhorst considers almost diagnostic. The difference between the percussion note and the shape of the dullness on full inspiration and full expiration may influence a wavering judgment.

Auscultatory percussion is regarded of much value. Aneurismal tumor may be present without thrill or murmur, but yields signs of dullness on percussion.

Auscultation.—Murmur, when present, is usually best heard over the tumor or abnormal pulsation. It is usually systolic in time, and transmitted in the direction of the vessels. It may be best heard over the vessels in the neck or in the course of the aorta. Sometimes the double murmur of associated aortic regurgitation is present. Occasionally, only a diastolic murmur is heard. As a rule, the aortic second sound is markedly accentuated and ringing in character.

I have intentionally omitted fluoroscopy up to this point, in order to emphasize its importance. By its means a condition of deeply seated tumor may be diagnosed when paucity of other symptoms confounds us.

Diagnosis.—Of this I shall speak but scantily. It must be based upon the etiological factors and the pathological condition of the vessels; upon the occurrence of pain, of pressure symptoms, and of the physical signs already alluded to. Among the chief conditions confusing the diagnosis are the following: Carcinomatous disease of the mediastinum. This is to be differentiated by history and glandular involvement elsewhere on the one hand, and expansile pulsation on the other. Some of the physical signs, too, are of assistance. Benign tumors are rare in this locality. Pulsation from simple aortic regurgitation, with dilatation, must be considered; also neurotic pulsation in anemic individuals.

In pulsating empyema, percussion-dullness is at the base of the chest, and quite extensive—usually upon the left side and at a distance from the median line. Pulmonary phthisis is to be differentiated by sputum examination, and a

consideration of the vascular and other signs of aneurism.

Before closing, I would call attention to Musser's opinion that inasmuch as aneurism may be present without diagnostic physical signs, while on the other hand, pressure symptoms may be in abeyance, if one of the two is present in the male subject past forty, with a previous history of gout, syphilis, alcoholism or muscular strain, the probability is that aneurism exists.

Literature.—Musser's *Med. Diagnosis*. Sajous' *Analyt. Cyc. of Pract. Med.* Butler's *Diag. of Inter. Med.* Bishop, on *Ear, Nose and Throat*. Hare's *Med. Diag.*, etc.

301 E. Grace Street.

GELATINE TREATMENT IN ANEURISM.*

By ENNION G. WILLIAMS, M. D., Richmond, Va.,

Professor of Pathology, Medical College of Virginia; Pathologist to the Memorial Hospital, etc.

In 1901 I made a preliminary report of a case of abdominal aneurism in a colored woman 40 years of age, treated with injections of a solution of gelatine. The mass extended from the ensiform cartilage to within five centimetres of the umbilicus, and, laterally, to the parasternal line on the right side and slightly beyond the parasternal line on the left side, producing a markedly visible elevation. It was rather firm and expansile. A loud bruit could be heard over it.

The patient was very emaciated and had been confined to her bed most of the time during the preceding year, and constantly for the previous six weeks. The pain was so severe that morphine had to be taken regularly every day and night.

The first injection of gelatine on September 16th consisted of 10 c.c. of a warmed aqueous solution containing 10 per cent. gelatine and 2 per cent. calcium chloride. On September 29th, a similar injection was given. On October 7th, 15 c.c. of a solution containing 10 per cent. gelatine only was given; October 15th, 20 c.c.; October 21st, 15 c.c., and November 4th, 20 c.c. of a solution containing 5 per cent. of

*Read before the Richmond Academy of Medicine and Surgery, July 28, 1903.

gelatine. This made a total in seven weeks of six injections—90 c.c. of solution containing six and a half grammes of gelatine and four-tenths gramme of calcium chloride.

At the end of this seven weeks' treatment the patient said she had not felt so well for more than a year. There was no longer the continuous pain in the back and sides. She took morphine only occasionally at night, and was so much stronger that she spent much of her time out of bed and could walk about with comparative ease. The aneurismal mass was firmer and the bruit less distinct and of a higher pitch. The injections of gelatine solution were continued through the following eight months at intervals of about two weeks, but larger injections were given—from 20 c.c. to 60 c.c. of the solution—at each injection. The patient continued to grow stronger and could walk up and down the stairs and out in the street. She never gave up the morphine entirely, but would usually take one-fourth of a grain at night. Towards the following summer the pains increased and her strength grew less, although the abdominal mass was apparently the same. The injections did not seem to give her the same relief. In July, after two weeks of agonizing pain in the left side, which morphine would not relieve, she died.

On account of my absence from the city Dr. Greer Baughman kindly held the autopsy for me, three hours after death. The arteries were sclerotic; the abdominal cavity was filled with clots. The aneurismal mass was adherent to the liver, stomach and intestines and partly to the diaphragm. The adhesions were so dense and the organs so massed together that great difficulty was experienced in separating them. The dilatation extended from two inches of the iliac bifurcation to, and including, part of the thoracic aorta. The seventh, eighth and ninth dorsal vertebræ were eroded to a considerable extent. The large sac of the aneurism was anterior. Against the anterior wall of this sac, along the summit, there was a dense laminated ante-mortem coagulum, crescent-shaped, and thickest in the middle. This coagulum did not appear to be very closely adherent to the wall, as there seemed to be a very narrow space (1 mm.) between the wall and the clot. Microscopic examination of the clot showed it to consist of a dense mass of fibrin, apparently deposited in layers at different times. Within the cavity of the aneurism was much coagulated

blood, more than one would expect only three hours post-mortem. This firm, dense clot lining the anterior part of the sac of the aneurism, readily accounted for the relief of pain and throbbing at first experienced by the patient, and the tumor becoming firmer and less pulsating. Posteriorly, the aneurism had eroded three vertebræ, leaving not much more than the upper and lower surfaces and the intervening cartilages. The rupture was found to have taken place posteriorly. The erosion accounted for the pain never having been entirely relieved and increasing so greatly toward the close.

Another case was that of a colored man aged 55; a hard drinker, with sclerotic arteries. He had had pain in his chest for two years. There was a large, pulsating expansile mass projecting just to the right of the sternum. At about intervals of ten days he was given three injections—30 to 50 c.c.—of a solution containing 10 per cent. gelatine. He said that several days after the injections the pain was much less. He left the hospital intending to return, but grew worse, and a month later died.

A post-mortem was made five hours after death. No rupture was found in the aneurism. The dilatation began at the aortic orifice and extended to the descending aorta. There were some clots in the aneurism, but they were all, doubtless, post-mortem. The third, fourth and fifth ribs were eroded through, and the second and sixth partially eroded. The right lung was collapsed and the left emphysematous. The abdominal and pleural cavities were filled with yellow fluid. The feet and legs were greatly swollen and oedematous.

I have given the injection to two other cases of suspected aneurism of the thoracic aorta, but without result, except that the patients believed that the pain was temporarily relieved.

In the treatment of the first case mentioned, from two to three hours after the first few injections, the patient had a chill, followed by an elevation of temperature, which, when I saw her the next morning, was 100° to 101°. This gradually subsided in twenty-four hours. Although the quantity of gelatine was kept up, the reaction lessened, until there was neither chill nor fever. The lessening of the reaction was partly coincident with the use of a purer gelatine rather than the gelatine bought in bulk for making culture media. In the second case, in which the purer gelatine was used, there was

no chill and only a very slight rise in temperature. This was the result in the other two cases.

Just what effect the calcium chloride has I have not sufficient experience to say. It was added because it has the reputation of increasing the coagulability of the blood. I thought it hindered the prompt absorption of the solution and, therefore, left it out after the first two injections.

During the treatment of the first case I made fifty-one tests of the coagulative power of the blood with a modification of Wright's Coagulometer before and after the injections. I will only summarize the results. Before an injection of 50 c.c. of a 10 per cent. solution of gelatine, the blood coagulated in two and a half minutes. Thirty minutes were consumed in giving the injection. Five minutes after the last injection the blood coagulated in one and a half minutes. Twenty-four hours after another injection the blood coagulated in one and a half minutes, having coagulated before the injection in two and a half minutes. Three days afterwards it coagulated in one and a half minutes, and five days afterwards in two minutes. These tests tend to show that the gelatine promptly increases the coagulative power of the blood and that the blood retains this power at least five days.

The solution used for the injections is prepared by adding the gelatine gradually to water just below the boiling point and keeping the solution at a slow boil for ten minutes. It is then filtered and kept in small flasks plugged with sterile cotton. It should be sterilized in a steam sterilizer for thirty minutes on three successive days.

The deaths so far reported in this treatment have been due to the gelatine being contaminated with tetanus germs. Great care should, therefore, be used to thoroughly sterilize the solution. At the same time it should be noted that excessive heating weakens the coagulative power of the gelatine. Just before administering, the solution must be thoroughly liquefied by immersing the flask in hot water. It is needless to mention the usual aseptic precautions necessary in using the anti-toxin syringe.

My experience has been that there is hardly any pain if the injection is given carefully and slowly, and with the solution hardly above the temperature of the body. I have given the injections beneath the breasts, in the back and in

the thighs. In the selection of the site one can consult their convenience. I usually apply a hot water bag after the injection to hasten the absorption. The patient should be kept absolutely quiet for at least five days and then allowed to move about a little until the next injection, two to ten days later, to keep up the general health.

I believe the blood will only clot in saccular aneurisms, and the treatment is applicable only to such cases.

Lancereux, who first announced this treatment, and others who have since reported cases, have used 1 per cent. to 2 per cent. gelatine in normal salt solution and given 200 to 250 c.c. at one injection. I prefer to use a 5 per cent. to 10 per cent. solution and to give about 50 c.c. at one injection, instead of 200 c.c. of a 1 per cent. to 2 per cent. solution, because the larger the quantity of solution injected hypodermically the greater is the circulation stimulated. If the same amount of gelatine can be injected with a smaller quantity of solution the greater will be the tendency of the blood to clot.

In conclusion, the treatment is one that should be given a thorough trial. So far, it seems to be harmless if the solution is properly sterilized. It is practically painless if given with due care. The gelatine undoubtedly increases the coagulative power of the blood. In the treatment of aneurism it is probably of value only in cases of the saccular type. It is doubtless of great value in many cases of hemorrhage and other conditions where a prompt increase in the coagulative power of the blood is desired.

315 Grace street, East.

Radium Rays for Internal Cancers.

Mr. Alex. Graham Bell, noting (*Amer. Med.*, August 15, 1903) that Röntgen and radium rays are curative of external malignant growths, but not satisfactory in deep-seated cancers, suggests that the unsatisfactory results arise because the rays have been applied externally—having thus to pass through healthy tissues to reach the cancer. The Crooke's tube for Röntgen rays being too bulky, he sees no reason why a tiny fragment of radium sealed up in a fine glass tube may not be inserted in the very heart of the cancer, thus acting directly upon the diseased material.

Book Notices.

Studies in the Psychology of Sex. Analysis of the Sexual Impulse. Love and Pain the Sexual Impulse in Women. By HAVELOCK ELLIS, L. S. A., Fellow of the Medico-Legal Society of New York, etc. Philadelphia: F. A. Davis Co. 1903. Cloth. 8vo. Pp. 266. Price, \$2 net, delivered.

It is announced that this book is sold only to physicians, lawyers, clergymen, advanced teachers, and scientists. It is a book which, rightly used, furnishes a vast deal of information of use to the classes of persons to whom it is sold. But with many on the border line of mental unsoundness, or with those who are simply prurient about such matters, ways and means are suggested in the narration of cases of sexual perversities that may lead to a great deal of injury to virtue, to mind and to body. And yet the facts should be known to scientists. And the author has done much to furnish facts on which to base theories that serve in explanation of many things we see about love and the sexual passion. We scarcely know how to further notice the book lest we develop in the mind of some a prurience which ought not to exist. And yet to the proper reader—to the student of such matters—we know of no work that is more valuable, both as to the record of cases and of perversity. To such students we most unreservedly commend it.

Organic Nervous Diseases. By M. ALLEN STARR, M. D., Ph. D., LL. D., Professor of Diseases of the Mind and Nervous System in College of Physicians and Surgeons, Medical Department of Columbia University, in the City of New York, etc. *Illustrated with 275 Engravings in the Text, and 26 Plates in Colors and Monochrome.* Lea Brothers & Co., New York and Philadelphia. 1903. Cloth. 8vo. Pp. 751. \$6; in leather, \$7 net.

This is an important new work—whether viewed as a text or reference book for the student, or as the guide book for the practitioner. The object, as stated by the author, is “to make clear both to students and to practitioners the principles upon which the location and diagnosis of nervous diseases rest, and to put before them in a definite manner the appropriate medical and surgical treatment, and its results.” Such have been the advances in neurology during the past ten years, that the diagnosis of nervous diseases is less difficult and more exact,

which make it possible to trace almost any symptom presented to some disturbance of function in a definite nerve centre or nerve tract. This development of accuracy of diagnosis has led to precision in treatment—especially as to the application of surgical measures for the relief of diseases formerly considered incurable. While the investigations of other authors in neurology have been freely used, most of the book is based upon carefully taken notes of cases during the past twenty years. The style of the writing is pleasant reading, and the graphic descriptions of signs and symptoms and pathological demonstrations give intense interest throughout to this work. The publishers have also done their part magnificently well in every particular—adding greatly to the attractiveness of the publication. Every doctor should possess himself of a copy of this work—whether he be a physician or surgeon; for the general practitioner will often meet with cases which this book will enable him to diagnose, and from which proper lines of treatment will be suggested. The work is well indexed.

The Practical Medical Series of Year Books. Under the General Editorial Charge of GUSTAVUS P. HEAD, M. D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Vol. VII. *Pediatrics*, Edited by ISAAC A. ABT, M. D., Assistant Professor of Medicine (Pediatric Department), Rush Medical College; *Orthopedic Surgery*, Edited by JOHN RIDLON, A. M., M. D., Professor of Orthopedic Surgery, Northwestern University Medical School. June, 1903. Chicago: The Year Book, Publishers. Cloth. 12mo. Pp. 232. \$1.25.

The Practical Medical Series comprises ten volumes on the year's progress in medicine and surgery, the price of which series is \$7.50 a year. The *Series* is well edited by distinguished men in their specialties—each volume taking up a different class of subjects. The series is especially arranged for the general practitioner, who has to deal practically with all departments of medical and surgical study, and to him it affords a most excellent digest of the facts brought out during the previous year. The editor of the Department on Pediatrics shows thorough familiarity with the literature on his subjects during the past year, and proves himself conservative in not announcing certain advances until justified by the results of clinical experience and observation. Thus, while familiar with the literature on the serum therapy

of scarlet fever that has been brought out during the past year or so, he is unwilling to give prominence for the present to such literature, until its value has been tested by clinical observations as to its efficacy. Among facts worthy of record is that typhoid fever of infants under two years of age is not as rare as has been supposed. Great advances have been made during the year in the prevention and treatment of gastro-intestinal diseases of infants—nearly all writers emphasizing the importance of securing pure milk for feeding. The editor of the section on "Orthopedic Surgery," Dr. Ridlon, in a very masterly way, but succinctly, enters into discussion of the Lorenz "bloodless methods" in surgery—pointing out the misnomer. Most of the advances of the year have related to hip disease, Potts' disease, club feet, tendon grafting, etc.—descriptions of which are given. The book is valuable to the practitioner who seeks to keep up with the times.

Plain Hints for Busy Mothers. By MARIANNA WHEELER, Superintendent of the Babies' Hospital, New York, etc. Illustrated by F. M. MILLER. New York: E. B. Treat & Co. 1903. Flexible Leatherette. 12mo. Pp. 57. Price, 35 cents.

The object of this booklet is to give a few practical suggestions to aid mothers in limited circumstances, who must care for their own babies while at the same time attending to domestic duties. The style is plain and simple, and unlike many such publications, this booklet is full of common sense advice as to general health, clothing, food, bathing, fresh air, etc. The chapter on "Emergencies," such as bruises, burns, colic, constipation, convulsions, coughs and colds, diarrhoea, earache, spine, vomiting, etc., is a good one. Another chapter gives a number of receipts for making gruels, broths, etc. The concluding chapter on "Don't" is filled with useful advice. We would be glad to know that mothers generally adopted this little work for their guidance. A good index is appended.

Gynecology. By WILLIAM R. PRYOR, M. D., Professor of Gynecology in New York Polyclinic Medical School, etc. 163 *Illustrations in the Text*. New York and London: D. Appleton & Co. 1903. Cloth. 8vo. Pp. 380.

This "text-book for students and guide for practitioners" is strictly limited to gynecology. The very rare conditions described by some au-

thors are omitted as not being of practical value to either student or the doctor in his ordinary rounds of duty. The book is divided into 22 chapters. Chapter 1 describes the proper examination of patients; Chapters 20, 21 and 22, respectively, treat of hemostasis, anomalies and instruments. The other 18 chapters are on diseases peculiar to women—from catarrhal vulvitis to carcinomatous conditions of the uterus, etc. In his details of signs and symptoms that lead to the correct diagnosis, the author writes with a finely descriptive pen, and in the description of operations, the author is very clear. We are a little surprised that so little reference is made to the treatment of such conditions as cancer by the X-ray—a method of treatment that is showing up better results than the supposed radical operation in many cases. No work on gynecology and the like can be thoroughly up-to-date that does not now recognize the wonderful curative effects of this new therapeutic agent. But with this exception this is a most valuable contribution to surgery of diseases peculiar to women.

Text Book of Chemistry. *For Students of Medicine, Pharmacy and Dentistry.* By EDWARD CURTIS HILL, M. S., M. D., Medical Analyst and Microscopist; Professor of Chemistry and Metallurgy in the Colorado College of Dental Surgery; Professor of Chemistry and Toxicology in the Denver and Gross College of Medicine, etc. *With 78 Illustrations, including 9 full page half tone colored Plates.* Pages xii-523. Crown 8vo. Extra cloth, \$3.00 net, delivered. Philadelphia: F. A. Davis Company, Publishers.

While the intent of this book, according to title, is "for students of medicine, pharmacy and dentistry," its arrangement, completeness and general utility adapt it to the wants of the doctor, pharmacist and dentist. It has chapters of practical value on medical physics, sanitary chemistry, toxicology, physiologic and pathologic chemistry, clinical chemistry, besides the usual chapters on chemie philosophy, inorganic chemistry, the carbon compounds, analyses, incompatibilities, etc. The appendix contains a table of the solubility of common drugs, arithmetic constants, equations of manufacturing chemistry, ores, rocks and minerals and a list of popular and alchemic names. The larger part of the volume is devoted to the needs of the physician. For the student's review work each section concludes with a generally well

prepared series of questions. The index is very full. All in all, this is a work on chemistry that doctors want.

International Clinics. *A Quarterly of Illustrated Clinical Lectures and Especially Prepared Articles, etc., by Leading Members of the Medical Profession Throughout the World.* Edited by A. O. J. KELLY, A. M., M. D., Philadelphia, with the Collaboration of a Number of Eminent Authors in Europe and America. Vol. II. Thirteenth Series, 1903. Philadelphia: J. B. Lippincott Co. 1903. Cloth. 8vo. Pp. 311.

We have so often commended this *Quarterly* to the patronage of the profession that we could but repeat what we have so frequently said about it: That the doctor who is not a regular subscriber and a systematic reader of each issue is sure to lose much that would be of constant use to him in practice. The present volume is devoted to the summer diarrhœas of children (63 pages), diseases of the pancreas (58 pages), treatment of a number of diseases and disorders (54 pages), advances in medicine (40 pages), advances in surgery (35 pages), in pediatrics (16 pages), in obstetrics and gynecology (30 pages), and in ophthalmology (18 pages). A full index is appended. A large number of plates and figures illustrate the text.

Transactions of the American Ophthalmological Society. Thirty-eighth Annual Meeting. Held at New London, Conn., 1902. Vol. IX, Part III. 8vo. Pp. 275. Paper.

These *Transactions* are of special value to ophthalmologists, etc. The papers were numerous, and the discussions all excellent. With the great number of eye specialists in the South, we are surprised to find the register of so few of them in the roll of membership. Dr. S. B. St. John, Hartford, Conn., is secretary and treasurer.

Editorial.

The Virginia State Board of Health

Will hold a session at Roanoke, Va., during the days of the session of the Medical Society of Virginia. Important matters will be considered by it, which will interest doctors of the State in general.

Medical Society of Virginia.

The announcement of the thirty-fourth annual session is issued. About fifty authors of papers are given, and for the most part the subjects are of every-day interest to the practitioner, and the authors are leading men in the profession. The leader of the discussion of the subject for general discussion—*Gastric Affections*—is the president of the American Medical Association, Dr. John H. Musser, of Philadelphia, who has been an honorary fellow of the Virginia Society for some years. No one could have been selected as a more suitable man for participation in the discussion than Dr. John C. Hemmeter, of Baltimore, whose works on *Diseases of the Stomach* and on *Diseases of the Intestines* have become standard authorities for physicians throughout the English-speaking world. In addition to the long list of papers on important subjects, we are assured of the attendance of a number of fraternal delegates from other States and invited guests, who, by their expected participations in the discussions of papers as presented, will add greatly to the record value of this session. We point with pardonable pride to the fact that we know of no State Medical Society that can claim a better programme than that arranged for the session of the Medical Society of Virginia at Roanoke, September 15-17, 1903.

From a social point of view no session ever held has offered so many and such enjoyable entertainments as those planned for the session at Roanoke. We only fear that in the profusion of excursions, receptions, banquets, etc., that are proposed, many of the members may be enticed from the scientific part of the proceedings. The promise of these social features is enough in itself to draw an unusually large attendance, especially so as the Committee on Arrangements particularly requests that the fellows and visiting doctors will get the lady members of their families, etc., to accompany them to Roanoke on this occasion.

The number of applicants for fellowship is unusually large, and this number will be very materially enlarged if fellows will each make it a duty to persuade his friends not yet in membership to forward their applications for enrollment at the approaching session of the Society.

With a Society of such enthusiastic personal membership, and one that has been so successful

in every particular, it is a matter of very debatable interest whether or not the organization should be changed so as to be a body of delegates from the counties and cities of the State. We are a little timid with reference to the proposed change of plan of organization of the Medical Society of Virginia. There are a number of counties with too sparse a professional population to justify the doctors of those sections to organize themselves into town or county medical societies. It is all right to have the district, city and county organizations as at present—in *affiliation* with the State Society. But local bickerings and jealousies are apt to arise between representative doctors and their friends of some of the cities and counties when so and so is elected delegate, to the exclusion of others “just as good, if not better.” Sensitiveness of feeling is a marked trait among doctors who are competitors for professional honors. As it now is, each member of the Medical Society of Virginia feels himself as good as the best, and he recognizes his individuality when he rises upon the floor of the session to express his views. This feeling of individual importance of each fellow attending a session, we verily believe, is a strong element in bringing about the remarkable success of the Society, which annually attracts to its sessions men of such fame throughout the United States and leads them to appreciate that it is an honor to be an honorary fellow.

Besides, the house of delegates, or representatives, as proposed, it is to be presumed would be composed of the leading practitioners of their several communities. To keep them in session to attend to the various important business matters as they may arise would be to take them from the meetings of the Society during the reading and discussion of papers, etc., and from whom the members generally are particularly anxious to have discussions. To depend upon the house of delegates, or representatives, to leave their homes and attend to the business matters of the session in advance of its convening would be expecting too much of the representative doctors of the State, many of whom can scarcely spare the time from professional engagements to attend the session of the Society, and some of whom could not well afford the extra expense of spending extra time from their homes. Facing the facts as they are, we are inclined to give the advice, “Let well enough alone.”

Central (Virginia) State Hospital.

The officers of this hospital for colored insane of Virginia deserve great credit for their endeavor to make this a first class up-to-date institution in every particular. It is a pleasure to note that Dr. William F. Drewry has been re-elected superintendent for the term of four years. Dr. H. C. Henry, of Charlotte county, Va., was chosen first assistant physician; Dr. J. H. Garlick, of Henrico county, second assistant; and Dr. R. S. Talbot, of Bedford county, third assistant. Drs. H. A. Spitler and O. C. Brunk, graduates of the University College of Medicine, Richmond, and of the University of Virginia, respectively, are the internes. Mr. W. F. Driver, of Rockingham county, was appointed pharmacist and interne. An additional assistant and special pathologist will soon be appointed.

Dr. A. S. Priddy

Has moved to Bristol, Va., where he will devote special attention to diseases of women. He was for years a member of the Medical Examining Board of Virginia, and has done excellent professional work. We wish him great success in his new home.

Dr. Southgate Leigh, Norfolk, Va.,

Asks us to reserve space for the announcement of the opening of his new, well arranged and thoroughly modern private hospital, but up to the time of going to press the advertisement has not been received. The eminence of the Doctor as a surgeon and physician, and the wide extent of contributing territory give assurance of great success.

The Official Report of the Medical Examining Board of Virginia,

For the session held at Richmond during June, 1903, has not been received, but we are advised that it will be ready for the first September issue.

Contract Practice Wanted.

Dr. F. B. W——, who requests all answers to be addressed to him in care of the *Virginia Medical Semi-Monthly*, will pay cash for a \$1,500, \$2,000, or \$2,500 contract mine or mill practice in Virginia. Write full particulars as to price, terms, location in first letter, adding such other

particulars as may be deemed proper. References given and required.

Which Medical College?

This is a vital question with many prospective students at this time, who are writing all over the country for catalogues and announcements. But before a college is selected, there are some pertinent questions which such person should ask himself.

In the *first place*, do not undertake the study of medicine until the question has been sifted and the results weighed. Some determine on the study of medicine simply because their fathers and grandfathers were honored members of the profession. True, when such students graduate they may step "in the shoes of the old man," and have but little difficulty in securing all the practice they can attend to: provided, the young graduate is imbued with the proper spirit of acquiring all the information possessed by his father, and with a determination to go further and help in the development of new truths in medicine. *Have the proper motive.*

In the *second place*, has the young man a reasonable assurance of having enough money to complete his college course, and set up shop? There is scarcely a reputable medical college officered by men of proper hearts that does not annually have to deal with this question. Some young men who have the certificates of graduation from their "high schools," or, it may be, from some heavily endowed academic institution, who have not a dollar on earth—even prospectively—determine on medicine as their profession. Possibly they may see their way to borrow the means with which to take the first year's course of a regular four years' graded college course—trusting that during the vacation months they may secure work sufficiently lucrative to pay back what they borrowed and secure a new loan. Here and there such a plan may succeed, but in the great majority of such instances the parties find themselves unable to return to college the second or the third year, and thus their time and money are practically wasted, and they have then to make up their minds to return to the workshop or the clerkship in order to secure the essentials to keep soul and body together. Hence let the advice be taken, *have a reasonable assurance of being able to pay your debts* before undertaking the four years' course of medical studies.

Having the proper motive, and a reasonable

assurance of sufficient means to complete the graded college course of four or five years, has the prospective student sufficient health, after his academic graduation, to enter upon the years of medical study now required for graduation? It is a painful thing, as we are called upon year after year to experience it, to see the young man of brilliant perception, but who already has plainly the seeds of constitutional fatal disease in his system, come to a medical college. Poor fellow; he has selected the wrong profession for his life's work; for there is no profession that requires better health of body as well as of mind. That student may attain a high mark in his classes, but he will not do for a doctor who has to endure peculiar strains upon his nervous and physical system. Every year many of such students have to withdraw from their colleges and return home to become the worse invalided by reason of the overtaking of their physical powers of endurance. *See that your health is reasonably good before undertaking the study of medicine.*

Other questions naturally arise in deciding whether or not to begin the study of medicine that our lack of space forbids us from entering upon. But with the proper motive, sufficient means in view, and fairly good health, when the determination is made to become a medical student, the next important question for discussion is, *which medical college is to be selected in which to pursue the study of medicine to its finish?* A number of important items come in just here for consideration.

1. Is the college under consideration properly equipped in its laboratories and hospital arrangements, and are the professors and assistants competent to teach with the material at hand? Have the teachers the reputation of being *teachers*? Nearly every college in the country—second rate as well as first rate—has a something about it which is attractive to the eye of new comers, and which is pointed out to him as being something that no other college has. It is better to look at this matter from an all round standpoint, than to be attracted by a single item. Are the apparatus, microscopes, appliances, etc., in the laboratories there for use or simply for show? Are there enough capable instructors in the college to divide the laboratory work up into small classes so as to let each student have the opportunity of personal investigation or experiment? Are the didactic teachers attentive to their work, and do the quiz masters

do their duty each week? Are the dispensaries arranged for the systematic study of cases? Are the clinical facilities in the hospitals, etc., what they are advertised to be in the several college catalogues or annual announcements? Is there a general manifestation of interest on the part of the professors and adjuncts in their several duties and in their desire to be thorough teachers?

2. Is the college under consideration a sufficiently high grade one to give a standing to its graduates because they are graduates of that institution? There are some colleges in America of more notoriety than solid reputation for good, honest work, whose diplomas before State Boards of Examiners, etc., only give the holders the suspicious right to appear before them. Such colleges usually have a large number of students rejected in some of the examinations by reputable colleges, and such students seek these institutions because they have heard that it is relatively easy to secure diplomas from them. Graduates of such colleges but rarely are to be found in the high places in the gift of the profession.

For prospective students, this journal presents the advertisements of some of the best colleges in the Atlantic States, and the student would not do wrong in selecting any of them. We mention them by States as a matter of convenience:

Medical Department, University of Virginia.

The renown of this institution is established throughout the country. Its term of tuition (four years of nine months each) is perhaps one of the longest of any medical college in the United States. Its professors are capable and attentive to their trusts. Its laboratories are complete and the student has every opportunity to utilize the apparatus, etc., under the direction of instructors. Two or three years ago a modern teaching hospital was added, which is well patronized, and affords clinical material in abundance for the scientific study of cases. The thoroughness of instruction is proverbial, as attested by the standing of its graduates before Boards of Medical Examiners of the various States, of the U. S. Army and Navy, etc. The teaching facilities are continuously being expanded with the progress of medical education in the United States. No institution in the country excels this in the care taken in the didactic instruction of its students. The location is

healthy—about a mile from Charlottesville—with which it is connected by electric cars. The recent unfortunate newspaper notoriety with reference to the election of a president of the University does not affect, in the least, the Medical Department. Session of 1903-'4 begins September 15, 1903.

University College of Medicine, Richmond, Va.

This institution, founded by the late Dr. Hunter McGuire, during its ten years' existence has a record of remarkable success. It is a college founded by doctors, dentists and pharmacists for the education of students in each of these departments in keeping with the demands of the times. As to the Medical Department, it has recently purchased the Virginia Hospital, adjoining the college, which is a beautiful, spacious and well arranged building, with modern and complete equipment. Private patients' rooms are entirely cut off from the portion which contains the wards. This renders the use of the wards for daily teaching purposes entirely convenient, and the direct ownership of the hospital by the college insures students' admission to the wards as well as to the amphitheatre for purposes of clinical study. Special attention was given to bedside instruction last session, and a well arranged system of bedside clinics has now become a part of the catalogue. The Dispensary, the City Almshouse, the Virginia Penitentiary, etc., also afford material for clinical instruction—each class being under the care of a competent instructor. The equipment of the University College of Medicine was largely augmented during the past session, and the faculty has secured the services of two competent laboratory teachers, under whose guidance the laboratories will hereafter be made doubly effective. The obstetrical dispensaries have issued a report on the first series of 1,000 cases treated therein, which places this as one of the most successful of such clinics in the world. Copies of this report may be had upon application, and is worthy of reading by every physician. Graduates of this college are yearly awarded positions in several of the government hospitals. In addition, hospital appointments are annually made in the hospital staffs of the Virginia Hospital, the City Almshouse, the Retreat for the Sick, and other hospitals of Virginia and West Virginia, etc. Address Proctor, University College of Medicine, Richmond, Va., for the 100 page fully descriptive announcement of session of 1903-1904.

The School of Medicine of Georgetown University

Was originally founded with the idea of giving to the many employees in the Government offices at Washington, D. C., who wished to study medicine, etc., an opportunity to do so. Hereafter students will be required to devote their entire time to the study of medicine. With this institution some of the most prominent medical officers of the United States Government are connected as professors, who are familiar with the strict requirements of those graduates who propose entering the medical service of the Government. Laboratories are complete, and the clinical opportunities are numerous. The educational advantages of the national capital, with its unrivalled medical libraries, medical museum, and hospital benefits, which are open to students, combine to make this a most desirable medical college. Write to the Dean, 1600 T street, N. W., Washington, D. C., for announcement of session 1903-1904.

Medical Department of Georgetown University, Washington, D. C.

The new buildings for the hospital and medical school of this time-honored University have been opened. Its didactic course of instruction cannot be surpassed. Its laboratories are complete in every detail. It offers to the medical student all the facilities for learning which the Government libraries, museums, hospitals, laboratories, etc., afford—the hours of lectures, quizzes, etc., in the college building being so arranged that students may avail themselves of the practical advantages offered. The standard of graduation is high. Application to the Dean, 1225 H street, N. W., Washington, D. C., will secure a copy of the usual annual announcement.

University of Maryland. School of Medicine, Baltimore.

Founded 1807, this school of medicine is the fifth oldest medical college in this country, and its graduates—many of them men of marked eminence in the profession—are located in all parts of the South especially. This institution possesses the distinction of being the first medical college of America (in 1833) to make anatomical dissections a compulsory part of the curriculum. It was also the first to give instruction in dentistry. And it was one of the very first to provide for adequate clinical teaching by the erection of its own hospital, etc. Beside being

thus the leader in such important particulars, the policy of its faculty of physicians has been one of wise conservatism, and yet never behind in the adoption of that which appears useful in the instruction of students which may have been inaugurated by other colleges. The new University Hospital, and the establishment and thorough equipment of its lying-in hospital, its laboratories of chemistry, biology, pathology, bacteriology, etc., place this school in position to offer to students of medicine and graduates a course of combined didactic, clinical and laboratory instruction which will compare favorably with that offered by any medical school in the United States.

College of Physicians and Surgeons, Baltimore, Md.

This college has gone into its new building, with its unsurpassed laboratories, modernly equipped. It has the advantage of many hospitals for clinical work, and owns a large and independent lying-in asylum for practical obstetrics. While special stress is laid upon laboratory training and practical clinical instruction, the lecture room work is fully abreast with modern ideas. Thoroughly competent directors in charge of the various laboratories, with a full corps of well-trained assistants, insure the students the best possible instruction. The ample facilities and equipments, the thorough, efficient and up-to-date system of teaching, and the results, as shown by the various State Board medical examinations, are highly satisfactory. Each student of the fourth year class is required to assume personal charge of a certain number of patients in the various departments of the hospital, and to do work in the different rooms in the dispensary.

The Baltimore Medical College, Md.,

Has a preliminary course of lectures, etc., beginning September 1st, during which students may acquaint themselves with each other, the professors, lecturers, etc., and get an idea of the work that lies before them. The *regular* course begins September 25th. It has excellent teaching facilities in modern college buildings, with completely equipped laboratories. Its dispensary and capacious hospitals afford ample material for clinical lectures and bedside instruction. It has a lying-in department of its own for clinically teaching obstetrics. For catalogue, etc., address the Dean, 712 Park avenue, Baltimore, Md.

The Jefferson Medical College of Philadelphia, Pa.,

Is one of the best known medical colleges in the United States. Its professors have furnished perhaps more and some of the best text-books in the several branches of medicine of any college. The advertisement in this journal tells of its unexcelled provisions for medical instruction. The hospital of the Jefferson Medical College provides a wealth of clinical material unequaled in America and seldom equaled in Europe. There is now in course of erection a new hospital upon the site of the old college buildings, extended by demolishing a number of neighboring structures. It will embody all the latest ideas for heating, ventilation and disinfection, and provide every facility for clinical instruction in the wards to sections of convenient size. It will be absolutely fire-proof, six stories in height, with basement and roof garden. The cost will aggregate \$700,000.

Medico-Chirurgical College, Philadelphia, Pa.

This college has rapidly developed into one of the leading institutions for medical instruction in the country. Features that have strongly contributed to this result are the facilities for practical teaching, careful laboratory instruction, limited and small ward classes, the semi-nary system of didactic instruction, free quizzes to all students, and the personal attention given by the faculty to the students. The clinical amphitheatre, the large hospital and dispensaries, the up-to-date laboratory building, with its equipments, etc., afford unexcelled opportunities for practical work and instruction to both undergraduates and post-graduates. The departments of dentistry and of pharmacy are likewise up-to-date. A special quiz course is provided for post-graduates in medicine who propose preparing for examination by the boards of the United States Army, Navy and Marine Hospital service, as also for the several State Boards and hospital examinations.

Western Pennsylvania Medical College, Pittsburgh, Pa.

The eighteenth annual session of this college—the medical department of the Western University of Pennsylvania—will begin October 1st, and continue eight months. Few institutions equal it in the thoroughness of its course of instruction—none excel it. Its laboratories and apparatus are ample for every purpose of

the medical student. The manufacturing interests of Pittsburgh compel a large population of the working class, who keep the hospitals well filled with cases of diseases and injuries of all grades and kinds common to such sections of country. These cases afford the student ample clinical material of all kinds—surgical, medical, obstetrical, in pediatrics, and in each of the several specialties. The corps of professors and assistants are well selected for the faithful and earnest discharge of their several duties, and the results of their work, as tested by the various medical examining boards—State and National—is most gratifying.

The New Orleans Polyclinic

Is the only distinctive institution in the Southern States intended for bedside teaching of practitioners of medicine, etc. Founded in 1887, it has each year become better and better prepared to give practitioners who may attend its sessions thoroughly practical bedside courses of instruction. This fact has become widely appreciated, as the constantly growing sizes of the classes show. The clinical advantages of the New Orleans Polyclinic, for either special work or for the purposes of the general practitioner of medicine or surgery cannot be surpassed by any like institution in the country. For the Southern doctor especially, one cannot suggest a polyclinic where he could gain more useful experience for his special purposes. The seventeenth annual session opens November 3, 1903, and will close May 28, 1904. The specialties are fully taught, including laboratory work. For further information address New Orleans Polyclinic, P. O. Box 797, New Orleans, La.

The New York Polyclinic.

Chartered by the University of the State of New York, is the oldest post-graduate medical school and hospital in America. Its equipments and facilities for teaching the post-graduate are unexcelled. Its corps of professors, instructors and assistants number nearly a hundred—covering every specialty of medicine, surgery, obstetrics, etc. The post-graduate has only to make known his special line of study in which he wishes to receive practical instructions, and the opportunity is at once afforded. No city of the world affords better hospital facilities. A request of the Secretary, Dr. W. R. Townsend, 214 East 34th street, New York, N. Y., will secure further information.

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Original Communications.

REMARKS ABOUT EYE INJURIES, WITH CASES IN POINT.*

By JOSEPH A. WHITE, A. M., M. D., Richmond, Va.,

Ophthalmic Surgeon for the C. & O. and Southern Railways; Professor of Ophthalmology in the University College of Medicine, Richmond, Va.; Member of the American Ophthalmological Society, the American L., R. & O. Society, etc., etc.

Eye injuries are not uncommon among railway employees, both in the shops and on the road, and a few remarks about them may interest this assemblage of railway surgeons. Even the simple impact of a hot cinder on the cornea may be productive of serious consequences, such as destructive ulceration and loss of the eye, if skilful treatment is not at once instituted. I have seen eyes lost from this cause more than once. But I would especially call your attention to the more serious forms of injury, such as penetrating wounds, foreign bodies in the eye and the damaging results of concussion, such as dislocation of the lens, intraocular hemorrhage and detachment of the retina.

The loss of an eye is of equal gravity with the loss of a limb; therefore no precaution should be spared to prevent this misfortune. An injured eye does not, however, receive the same consideration as an injured limb. Formerly many a limb was sacrificed by amputation that to-day would be saved by our improved methods and greater knowledge of the possibilities in such cases. Amputation is now the last recourse, after every effort to save the limb has failed.

As it was formerly with injured limbs, so it is still, to a great extent, with injured eyes. A serious wound involving the inner structures or coats of the eye, the supposed entrance of a foreign body, or even blindness due to internal

injuries, call for the immediate removal of the eye in the opinion of many surgeons. They argue that the eye is practically blind; there is little or no chance for its recovery as a useful organ; the other eye may be imperiled through sympathy by waiting and its removal will save the patient a long and tedious period of slow healing. Moreover, if it is a railway case, the road or hospital association will be at considerably less expense. Hence the eye is enucleated, when, very often, conservative treatment might have saved it.

It is rare that there is any immediate demand for the removal of an eye. No harm can come from waiting a while if the patient is kept under daily observation, and often a chance for saving the eye may develop; even in a desperate case that we may have considered hopeless. Sympathetic trouble in the other eye is most likely to occur in from two to six weeks after the injury, and may possibly come on at any time, but in reality it is only in a small percentage of injuries that it occurs at all.

The most unfavorable cases are *wounds of the ciliary body*, as sympathetic trouble is more probable in them than in other forms of injury, and even in these we may sometimes save the eye, if no depressed scar results. When there is a *foreign body* in the eye we should use the magnet if the wound was made by steel or iron, and even when in doubt the magnet should be tried, as under aseptic precautions it does no harm, and it may solve the doubt. Foreign bodies, other than steel or iron, cannot very well be removed from the interior of the eye without materially damaging the organ, and yet eyes may occasionally be saved, as the foreign body may become encysted. In all cases we should wait and watch the symptoms, which may or may not indicate enucleation, thus giving the eye every chance.

If the eye has been infected by whatever

*Read before the International Association of Railway Surgeons, Indianapolis.

caused the injury, the same conservative method should be followed, and many such eyes can be saved. But on account of the grave consequences that might possibly occur in these cases, such as extension of the infection backward with meningeal complications, or thrombophlebitis, with thrombosis of the cavernous sinuses, we must watch them with close attention. I have seen general infection of an eye follow simple wounds of the cornea as often as from deeper and more penetrating injuries or from foreign bodies.

Intraocular hemorrhage from concussion may rarely call for enucleation, because of the constant recurrence of the hemorrhage accompanied by great pain; but most of these cases make a recovery with damaged vision due to vitreous and retinal changes and some with a phthisical tendency of the eyeball. It is not always possible to give a satisfactory explanation for the recurrent hemorrhage, although pathological changes in the vessel walls will explain most of them.

Dislocation of the lens usually leads to enucleation sooner or later, because of resulting glaucoma or cyclitis, unless the lens is extracted, and this should always be attempted before removing the eye.

Detachment of the retina does not require enucleation, but results in destruction of the vision unless prompt treatment with confinement to bed is at once instituted.

I herewith submit a few cases illustrating these statements:

Case 1. Wound of cornea, iris ciliary body, lens, etc., with recovery.

S. C. S., 37 years old, a shop employee of the Chesapeake and Ohio, on November 6, 1902, had his left eye cut open by a chip from a chisel. The cornea was split from the ciliary body to the center, diagonally, in the upper and outer quadrant. The iris was wounded, the anterior capsule ruptured and apparently a foreign body had entered the eye, but an attempt to remove it with the magnet failed, leaving its presence doubtful. He was put into the Eye Infirmary and the eye dressed with sterilized vaseline and hot applications used for two or three days. No infection of the wound or of the interior of the eye developed, although the lens became gradually opacified and had swollen so much that on the 17th—ten days after the injury—I thought its pressure would result in cyclitis, as he was suffering great pain. Hot applications three times a day

were continued, and on the 24th the pain had entirely disappeared. All through the month of December he was kept under observation, the lens gradually shrinking by the absorption of its cortex, but the eye continuing irritable, with symptoms of a general uveitis. He was put upon iodide of potash carried to large doses, which gradually reduced the inflammation of the uvea, and by January 8th the eye was in condition for the removal of the remains of the lens. The extraction was followed by a slow subsidence of all irritable symptoms, and in February—the last time I saw him—the vitreous had cleared and his vision, with -11 , was 20-50.

This was a case of apparent entrance of a foreign body, with all the signs to confirm this presumption, and a hasty diagnosis to that effect would have lost to this man an eye that ultimately became a very useful organ.

Case 2. Wound of cornea, iris and lens. Recovery.

On November 24, 1902, C. F. R., of Huntington, W. Va., came to see me, suffering with an eye that had been injured five weeks previously. The eye had been struck by a hot iron chip, which cut through the cornea, iris and lens capsule, the wound extending slightly into the scleral region. The wound was a semi-circular one, extending from the margin of the cornea in the inferior inner quadrant upwards just under the edge of the pupil, then curving down towards the inferior outer quadrant. The iris was adherent to the cornea in two places and the lens partially opaque. He could easily count fingers, but could not decipher letters. He had been advised by an oculist to have his eye removed, because of the uncertainty of the presence of a foreign body in the eye. He was put in the Eye Infirmary, hot applications used two or three times a day and atropia salve applied locally. In a week all discomfort had disappeared, his eccentric vision was 20-180, and I sent him home to continue the same treatment. I saw him again on December 12th; the eye had remained quiet, but the lens was getting cloudier. On January 16th I saw him again with the eye still "in statu quo" and the cataract somewhat matured. On March 6th he returned and I extracted the lens. The eye was slow in healing, but on March 27th I was enabled to needle the cloudy capsule. On April 15th he returned and with a correcting glass his vision was 20-30.

Here, again, conservative treatment resulted

in a useful organ, although its removal had been advised by an oculist.

Case 3. Foreign body in the eye. Enucleation.

On December 23, 1902, H. J. B., 40 years of age, a boilermaker on the Atlantic Coast Line, was sent to me, having been struck in the eye either by a piece of steel or a paint scale from the boiler that he was repairing. This was a wound of the cornea and iris, and the presence of the foreign body was uncertain. He insisted that no foreign body had entered his eye. The symptoms were of such a nature, however, that I thought he was mistaken and I told him that unless there was a very marked change for the better his eye would have to come out. Hot applications and mydriatics were used constantly all through the month of January with only a temporary diminution of the irritation of the eye, which at times would get better and then break out again. Occasionally he suffered great pain. On February 6th the pain was so severe that I was obliged to use local bleeding to relieve him. This gave him temporary relief, and the eye seemed to get better for a little while, when the uveal irritation broke out afresh and the eye began to be phthisical. On the first of March I advised him, as he did not want the eye removed, to have an iridectomy done, but told him if the iridectomy did not give him any result the eye would have to come out. I did a perfectly clean iridectomy, and when the piece of iris was removed I could faintly discern what seemed to be a circumscribed white mass, which was probably exudation or pus surrounding a foreign body. About three days after the iridectomy he consented to have the eye out. It was removed under cocaine anæsthesia. Upon its removal I found a purulent mass in the vitreous surrounding a foreign body, which was a hard piece of paint scale.

This case shows that there is no hurry about enucleation, and that it can be done when all hope of saving the eye is gone.

Case 4. Steel in vitreous; removal by magnet and perfect recovery.

On March 5, 1903, W. D. R., car over-hauler on the Southern railroad, was struck in the right eye by a piece of metal from a hammer or chisel. The eye was perforated at the ciliary border, the iris was dislocated and the examination of the eye with the ophthalmoscope showed a cloudy vitreous and a detached retina.

I passed the magnet into the vitreous through the wound and removed the foreign body. I put him in the Richmond Eye Infirmary, kept him in bed, used hot applications and sterilized vaseline and gave him pilocarpine injections with iodide of potash internally to try to clear up the vitreous and obtain a reapplication of the retina. Ten days after the injury his vision was 20-135. Three weeks after the injury his vision was 20-30. At present the eye is perfectly sound, the vitreous clear and the retina replaced.

This is only one of a number of cases where I have saved the eye by the use of the magnet. I reported some cases of this kind to the Medical Society of Virginia in 1898.

This case also shows the advantage of prompt treatment of the retina.

Case 5. Injury of eye by piece of steel; infection of eyeball. Recovery. Foreign body encysted in eye for five years.

R. L. P., 33 years of age, workman at the Chesapeake and Ohio shops, was hurt whilst working with a hammer and chisel on a passenger coach at 8 A. M., September 2, 1898. I saw him at 12 o'clock. Apparently a foreign body had entered the eye in the lower outer quadrant of the cornea. There was a rupture of the sphincter of the iris, opacities in the lower outer quadrant of the lens and also opacities of the vitreous below and out. His vision was 20-45 by rolling the eye up and in. The wound in the cornea was so small that I could not introduce a magnet, but on approaching the magnet to the cornea I could see the foreign body rise into the illuminated field whilst watching it with the ophthalmoscope. For fear that the foreign body might have carried germs into the eye, I did not want to make a large incision to introduce the magnet, and thought I would wait until the next day to see the results. On the 3d there was decided pain, the upper lid was swollen and the eye showed all the signs of infection. On the morning of the 5th there was pus in the anterior chamber and the fundus of the eye was not visible. Under local bleeding, hot applications, the use of sterilized vaseline locally and cathartics and pilocarpine internally, the irritating symptoms subsided, the pus in the anterior chamber disappeared, the eye cleared up considerably, and on the 21st I cut an opening into the sclera down and out and introduced the magnet, hoping to remove the foreign body. This attempt proved a fail-

ure, and I told him there was every probability that the eye would still continue to give trouble and that it might have to be removed. He was under continuous observation for the balance of September. In October he came to see me on the 11th, and the eye seemed to be getting along very well. On the 26th he called again and I found pus in the anterior chamber and the eye was very much inflamed and painful. Local bleeding and the same treatment as above recorded brought the eye back into good condition. I saw him on November 8th, when he was doing well. A year later—November 20, 1899—he called, and the only evidence of trouble was a traumatic cataract. In May, 1900, he came to see me again and the lens was evidently disappearing by absorption. I did not see him again until this month—June, 1903. In looking up his case I dropped him a line to call and see me, and on the 9th instant he came to my office. I found the eye perfectly healthy looking, with no sign of irritation, the corneal cloud had disappeared, leaving the very faintest scar where the foreign body had entered, and I could not find any sign of the opening made into the sclera for the use of the magnet. The iris was adherent to the capsule down and out, but otherwise dilated freely under a mydriatic. The lens had been absorbed, leaving a cloudy capsule, and it was difficult to see whether the vitreous was much clouded or not, although on tilting the eye down and out I could get a whitish reflex from the former location of the foreign body, as if it was encysted. His vision was 5-300. A needle operation on the capsule would, in all probability, give him a very good eye.

These two last cases show the different effects of a foreign body—in the one the eye steadily got worse until enucleation became imperative; in the other the foreign body became encysted and a useful eye was preserved.

Time does not permit me to give any great number of cases, but I could quote from my case-book many such results in support of my plea for conservative treatment of eye injuries. These I have given, however, are sufficient to make one hesitate about a hasty removal of an eye.

200 East Franklin Street.

Sound moves about 743 miles per hour.

A CASE OF PTOMAIN POISONING SIMULTANEOUS WITH SMALL-POX.

By LLEWELLYN ELIOT, M. D., Washington, D. C.

While the following history may be of service in dispelling the general idea that any one can diagnose small-pox at a glance on sight, I make the statement, that after intimate association for years with the disease as inspector and as physician in charge of the City Small-pox Hospital, cases present which have to be seen more than once before a positive diagnosis can be made.

Charles Fraser, in *The British Medical Journal* of September 6, 1902, reports a case almost similar to the one here reported, where the eruption followed oyster poisoning.

M—— I——, colored, male; aged 27 years, was reported as a "suspect" on the 17th of January. He gave the following history: Is a tramp, came from Wilmington, N. C., on a freight train. Never successfully vaccinated. Felt bad on the 14th, 15th, 16th, with general weakness and exhaustion, loss of appetite, and pain in the belly. Headache, with vertigo, came on the morning of the 17th; throat became inflamed. Denies chill, backache, and vomiting, as well as previous headache. Temperature 102°. Eruption appeared on the morning of the 17th, on the face, arms, chest, back, wrists, legs and soft palate; is papular, small, round, discrete and raised, some papules have a hard feel, others are soft. Eyes not injected; no bronchitis. Constipated with coated tongue and foul breath. He was placed in isolation to wait developments. Evening temperature was 105 $\frac{2}{5}$ °. Treatment: Cathartic, febrifuge, and a sedative. At 9 o'clock on the morning of the 18th, the temperature was 102°, the eruption was fading. At 12 M. temperature was 102 $\frac{3}{5}$ °, eruption nearly disappeared, bowels have moved often, and in large quantity. At 7 o'clock on the 19th, temperature 98 $\frac{3}{5}$ °; eruption entirely gone; feels perfectly well; allowed to go.

1106 P. Street, N. W.

New Orleans Polyclinic.—Seventeenth annual session opens November 2, 1903, and closes May 28, 1904. Physicians will find the Polyclinic an excellent means for posting themselves upon modern progress in all branches of medicine and surgery. The specialties are fully taught, including laboratory work. For further information, address, New Orleans Polyclinic, Post-office Box 797, New Orleans, La.

PROPERTIES OF THE SYRUP OF IODIDE OF IRON.

By M. D. HOGE, Jr., M. D., Richmond, Va.,

Professor of Pathology and Urology, University College of Medicine, Richmond, Va., etc.

The syrup of the iodide of iron is a syrup of liquid, containing about 10 per cent. by weight of ferrous iodide, having a sweet, strongly ferruginous taste and a neutral reaction, with a specific gravity of 1.35.

It should be kept in filled bottles tightly stopped to prevent the decomposition of the iron by atmospheric oxygen and the evolution of iodine.

The practice of adding saccharine matter to ferrous iodide is adopted for the same reason and was used for this purpose as far back as 1840.

The dose of this medicine depends largely on the result desired, and is from five drops to one drachm, well diluted. Its incompatibles are those of iron and iodine generally, and owing to its peculiar nature it is best not combined with other drugs; and it should always be given after meals.

It would seem that when this preparation was administered chemically there would be formed in the stomach and blood the iodide of sodium and the albumate of iron, but this is probably not the case, as both iron and iodine have been found in the saliva and urine.

The syrup of iodide of iron is such an old and valuable remedy that I wish to call particular attention to its range of usefulness.

1. In the *early stage of phthisis*, if given in drachm does three times daily, it promotes the secretions, acts as a diuretic to some extent and the weight of the patient increases.

2. In the *dry, rasping coughs and colds*, which patients, with the advice of the druggists, have attempted to cure by taking syrup of white pine or quinine and codeine, all the secretions tightly locked up, appetite gone and constipation troublesome, 10 to 15 drops of the syrup of iodide of iron every four hours will soon relieve the congestion and expectoration will be abundant.

3. In *amenorrhœa and dysmenorrhœa in scrofulous women especially*, the iodide has a most happy effect—the menstrual flow in cases of amenorrhœa often being soon established; the dose here indicated is 30 drops three times daily.

4. In *anæmic patients suffering from chronic*

rheumatic gout, one drachm, given with pure cod liver oil, often proves of very great benefit.

5. In *constitutional syphilis*, where there is evidence of cachexia, the iodide is a valuable remedy.

6. *Pale, strumous looking children*, with enlarged cervical lymphatic nodules, associated with chronic catarrh of the throat or enlarged tonsils, are much benefited by the use of 10 drops of the syrup after each meal. It here acts as an alterative, rapidly bringing about an absorption of the swollen lymphatics, and is a true iron tonic, enriching the blood.

7. In cases of *delayed resolution following croupous pneumonia*, iodide of iron acts splendidly as a tonic and reconstructive.

8. It has been highly recommended in that troublesome *affection of children*, known as *incontinence of urine*; the dose is from 20 to 30 drops in water after each meal.

308 E. Grace St.

Father—You should always remember that life is what we make it.

Spendthrift Son—Yes; but you see, dad, I don't make my own living.

Quinoliv.—Borde (*La. Sem. Med.*, March 4, 1903), prescribes sulphate of quinia for children of any age as follows: Mix one gram quinia sulphate in a mortar with eight grams olive oil. Twenty drops represents .05 gram of quinine. Pour these drops into teaspoonful of cold, fresh milk, preferably much sweetened. Each particle of quinine being enveloped in sweet oil easily slips over the mucous membrane of the mouth without repugnance. A far preferable way of administering quinine to child or adult is in the form of quinoliv (Davenport), given in a spoonful of cold water or milk. It is tasteless—being careful not to add any acid to the dose. Though the dose may be a grain or two more than quinine for the adult to secure the same effects, quinoliv possesses the advantage of being ready for use, is tasteless, and the nervous after-effects are minimized, while the combination with olive oil tends to relieve torpid action of bowels, etc. Try it when needing quinia.

Proceedings of Societies, Etc.

MEDICAL EXAMINING BOARD OF VIRGINIA.

The Medical Examining Board of Virginia met at Murphy's Hotel, Richmond, Monday, June 22d, 9:30 P. M., 1903. Dr. R. W. Martin, President, presiding. Dr. R. S. Martin, Secretary, recorded.

On roll-call the following other members were present: Drs. W. L. Robinson, Danville; W. B. Robinson, Tappahannock; H. M. Nash, Norfolk; S. Lile, Lynchburg; E. T. Brady, Abingdon; C. W. Rodgers, Staunton; J. E. Warriner, Brook Hill; R. M. Slaughter, Theological Seminary; O. C. Wright, Jarratts; M. R. Allen, Norfolk; and E. C. Williams, Hot Springs.

Minutes of the last meeting were read and adopted.

The President appointed Drs. W. L. Robinson, E. T. Brady and H. M. Nash a committee to formulate plan for conducting oral examinations.

The following is the report of the committee:

First. That oral examination begin at 9 A. M. and continue until 1:30 P. M.; written examination, from 3 P. M. to 7:30 P. M.

Second. That each examiner shall designate his station and branch by a card, and each applicant be instructed to present himself at every examination promptly.

Third. That the Secretary be required to register applicants the day preceding examinations, and furnish each examiner with a list by number of all applicants for his branch.

Fourth. That the Secretary be instructed to employ one or more detectives to be present during all written examinations.

After some discussion by the members of the report and a talk against adopting the fourth section by the President, a vote was called by sections, all of which were adopted except the fourth, which was voted down.

Dr. S. Lile then offered the following resolution, which was adopted:

Resolved, That the President designate at least six members of the Board to be present during each examination.

Questions on Surgery, Materia Medica and Therapeutics, Hygiene and Medical Jurisprudence, Histology, Pathology and Bacteriology, Obstetrics and Gynecology, Physiology, Chemistry, Practice and Anatomy were read and adopted.

Dr. S. Lile introduced the following resolution which was adopted:

"That in future all examinations be conducted in writing, except as to those exceptions made prior to the year 1902."

Dr. Rodgers introduced the following resolution, which was adopted, as amended by Dr. Brady:

"Resolved, That the rule in regard to secrecy as to the order of examinations be rescinded, and that the order of examinations be posted at the beginning of each session.

The following was the order of examinations:

Written, begun at 3 P. M. Tuesday, June 23d. Surgery, Materia Medica and Therapeutics, Hygiene and Jurisprudence.

Wednesday, 24th.—Histology, Pathology and Bacteriology, Obstetrics and Gynecology, Practice.

Thursday, 25th—Chemistry, Physiology, Anatomy.

The President appointed Drs. Wright and Rodgers special oral committee.

Board adjourned.

Board met at Murphy's Hotel June 24th, 1:45 P. M., Dr. R. W. Martin, presiding, Dr. R. S. Martin recorded. Following other members were present: Drs. A. S. Proddy, W. B. Robinson, Slaughter, Brady, Rodgers, Lile and Williams.

The subject of reciprocity being under discussion, the Secretary was instructed to ascertain and report at next meeting of the Board what State Boards having same requirements as our Board would exchange certificates on the terms of the Virginia Board.

Dr. Lile introduced the following resolution, which will be voted on at the next meeting of the Board:

Resolved, That each applicant on registering be required to present the Secretary with a recent photograph of himself with his signature thereon, together with certificate from at least two reputable physicians of his community as to general moral character.

Dr. J. E. Warriner introduced the following resolution, which was adopted:

In consideration of the courtesy extended the State Board of Medical Examiners in granting the use of the High School building, we hereby return our sincere thanks to Supt. Fox and the members of the School Board of Richmond.

It was decided to hold the next meeting of the

Medical Examining Board of Virginia at Lynchburg, Va., December 15, 16, 17, 18, 1903.

Board adjourned.

Board met in the High School building June 25th. Drs. W. L. Robinson and A. S. Priddy appointed Auditing Committee, and after examining books of treasurer, reported as follows: "We, the committee appointed to audit the accounts of the treasurer, find the entries correct and sustained by proper vouchers.

A. S. PRIDDY,

W. L. ROBINSON.

There was an oral examination given each applicant in addition to the printed questions that follow.

There being no further business and the examinations having been completed, Board adjourned.

R. W. MARTIN, *President*.

R. S. MARTIN, *Secretary*.

The Written Examination Questions

OF THE

Virginia State Board of Medical Examiners.*

Held at Richmond, Va., June 22-25, 1903.

SECTION ON SURGERY.

Examiner: Dr. Sam'l Lile, Lynchburg, Va.

Ques. I.—(a) Differentiate strangulated from incarcerated hernia.

(b) Describe the best non-operative methods of reducing strangulated hernia.

(c) Give causes, symptoms and treatment of subluxation of inferior maxilla.

Ques. II.—(a) What is hare-lip? State age at which it is preferable to operate, and describe most approved operation for the unilateral variety.

(b) What are bed-sores? Give methods of prevention and treatment.

Ques. III.—(a) What is empyema? Give causes and treatment.

(b) What are hemorrhoids? Give in detail surgical treatment.

*In answers by the applicant to any of the questions of any of the sections, it is distinctly understood that each applicant pledges his or her honor that he or she has neither given nor received information improperly during the examinations. Furthermore, each applicant, when he finishes the papers of any section, must sign them by his registered number and not his name.

SECTION ON MATERIA MEDICA AND THERAPEUTICS.

Questions on Materia Medica—Regular School.
Dr. W. B. Robinson, Tappahonnock, Va. Examiner.

I.—(a) Describe the action of arsenious acid, in medical doses, on the digestive tract, the circulation, respiration and the nervous system.

(b) Give the differences in action between the ordinary bromides.

(c) Give the principal alkaloids of cinchona.

II.—(a) Give the physiologic effect of belladonna.

(b) How does digitalis affect the heart's action?

(c) Describe the action of calomel in medium doses and mention that portion of the intestinal tract it specifically affects.

Questions on Therapeutics—Regular School.

Dr. J. E. Warriner, Brook Hill, Va., Examiner.

I.—(a) For what purposes is bloodletting useful, and what drugs have taken its place in late years?

(b) Name four preparations containing mercury in the metallic state.

(c) Name four salts of mercury, with brief therapeutic application of each.

(d) Name the drugs useful in the treatment of *angina pectoris* and explain their action.

II.—(a) Outline briefly the therapeutic measures most esteemed in the treatment of pulmonary tuberculosis.

(b) Give the treatment for hæmoptysis.

(c) What are the important uses of carbolic acid, and give its antidotes?

(d) Write a prescription for a diuretic mixture to contain not less than three active ingredients.

Questions on Materia Medica—Homeopathic School.

Dr. E. C. Williams, Hot Springs, Va., Examiner.

(Answer two blocks of questions.)

I.—(a) Differentiate the skin symptoms of (1) *rhus toxicodendron*; (2) *graphites*, and (3) *sulphur*.

(b) State the uterine symptoms of *sabina*.

II.—(a) Describe the physiological action of *veratrum album*.

(b) Mention the organs or tissues especially affected by (1) *trillium pendulum*; (2)

stramonium; (3) chelidoneum, and (4) magnesia carbonica.

III.—(a) State the source, mode of preparation, physiological action and clinical use of podophyllum.

(b) The same of apis mellifica.

Questions on Therapeutics—Homeopathic School.

Dr. E. C. Williams, Hot Springs, Va., Examiner.

(Answer two blocks of questions.)

I.—(a) What symptoms would cause you to give (1) gelsemium, or (2) cimicifuga in a case of dysmenorrhœa?

(b) When would arsenicum be of use for an ulcer?

(c) Mention three remedies commonly used in urticaria and give the indications for one of them.

(d) State the indications for the use of hyoscyamus in typhoid fever.

II.—(a) Under what conditions would you use (1) aconite; (2) cactus, or (3) spigelia in diseases of the heart?

(b) In what classes of cases are the following remedies principally used? (1) petroleum; (2) petroselinum; (3) pareira brava, and (4) cenanthe crocata.

(c) What symptoms would cause you to prescribe bryonia in jaundice?

(d) Mention three remedies of especial use after an excess of mercury.

III.—(a) Mention three remedies commonly used in hæmoptysis and give the indications for the use of one.

(b) Give the indications for the use of arsenicum iodatum in influenza.

(c) Differentiate between sabina and secale in a threatened abortion.

(d) State the diet you would prescribe for a lithæmic patient.

SECTION ON HYGIENE AND MEDICAL JURISPRUDENCE.

Dr. A. S. Priddy, Bristol, Va., Examiner.

Questions on Hygiene.

1. Name some diseases caused by industrial occupations and the respective causes in such diseases.

2. Describe in detail the hygienic requirements in the construction of a modern study room for from forty to fifty pupils according to modern ideas.

Questions on Medical Jurisprudence.

1. What questions in relation to the legal effect of insanity may come before the court for decision?

2. In the matter of professional liability, what legal requirements are required of physicians?

SECTION ON HISTOLOGY, PATHOLOGY AND BACTERIOLOGY.

Dr. R. M. Slaughter, Theological Seminary, Va., Examiner.

(Answer three blocks.)

I.—(a) Give the normal histology of a nerve.

(b) Define necrosis.

(c) Name the causes of necrosis (classifying according to whether from disordered nutrition or injury).

(d) Explain the difference (specially as regards causation) between moist and dry gangrene.

II.—(a) Define ærobic and anærobic and name some ærobic and some anærobic bacteria.

(b) How are anærobic bacteria cultivated?

(c) Describe the B typhosus and give the tests by which it is differentiated from the B coli communis.

(d) Why is the B pyocyaneus so called?

III.—Give the pathological nature and bacterial cause of (a) acute Leptomeningitis.

(b) Epidemic meningitis.

(c) Basilar meningitis.

(d) Give the morbid anatomy of basilar meningitis.

IV.—(a) What are the islands of Landerhans, and where found?

(b) What is metaplasia?

(c) Name the lesions that may be caused by the diplococcus lanceolatus?

(d) What is a sarcoma? Give its principle varieties unmixed and mixed.

SECTION ON GYNECOLOGY.

Dr. W. L. Robinson, Danville, Va., Examiner.

Ques. 1. What are the chief causes of dysmenorrhœa, outline treatment, medical and surgical?

Ques. 2. For what affections of the uterus is curettement advisable? What are the positive indications?

Ques. 3. For what is hysterectomy done? Give the steps of the supra pubic method.

SECTION ON OBSTETRICS.

Dr. H. M. Nash, Norfolk, Va., Examiner.

Ques. 1. Enumerate the principal fœtal, uterine and pelvic causes of dystocia.

Ques. 2. Describe both the instrumental and manual methods of extracting the head in breech cases.

Ques. 3. Give the symptoms, prognosis and the treatment of hæmatoma of vulva or vagina.

SECTION ON PHYSIOLOGY.

Drs. R. M. Slaughter, Theological Seminary, Va., and Dr. E. C. Williams, Hot Springs, Va., Examiners.

(Answer any three of the four blocks of questions.)

I.—(a) Describe the process of deglutition.

(b) Describe the respiratory changes in the blood.

(c) Define metabolism.

II.—(a) Define albuminate, carbohydrate, hydrocarbon; give two examples of each.

(b) Name the most important digestive juices.

(c) Give the cause of muscular fatigue and state how recovery takes place.

III.—(a) What are the functions of synovial fluid and of cartilage?

(b) What is meant by arterial tension, and how is it regulated?

(c) What are the functions of the trigeminal nerve?

IV.—(a) Describe the heat regulating function of the skin.

(b) What is lymph? Chyle? Describe each.

(c) What are the results of section of the third cranial nerve?

SECTION ON CHEMISTRY.

Dr. O. C. Wright, Jarratts, Va., Examiner.

(Answer any three blocks.)

I.—(a) Give chemical and physical properties of oxygen.

(b) How much potassium chlorate does it takes to liberate 100 pounds oxygen?

(c) Heat KClO_3 ; what result do we get? Write out equation.

II.—(a) Name the so-called noble metals.

(b) How are the oxides of the noble metals affected by heat?

(c) Give valence weight of each of the 12 non-metals.

III.—(a) Mix silver nitrate and sodium chloride, what is the result? Write out equation.

(b) Give valence of silver.

(c) How is silver separated from lead (argentiferous galena)?

IV.—(a) Give a reliable test for uric acid in urine.

(b) Give chemical test for blood in urine.

(c) How many grammes of solids does 1450 C. C. urine of a sp. gr. of 1018 contain?

SECTION ON PRACTICE OF MEDICINE.

Dr. E. T. Brady, Abingdon, Va., and Dr. E. C. Williams, Hot Springs, Va., Examiners.

1. Describe a case of scarlatina, giving medicinal, hygienic, and general management? What are the most frequent complications and sequelæ?

2. Give causes and symptoms of (a) peritonitis; (b) enteritis.

3. Give ætiology and clinical features of (a) acute nephritis; (b) amyloid degeneration of kidney.

4. What are the most common forms of parlyses, upon what conditions do they depend, when are they most amenable to treatment, and in what class of persons are they most likely to be found?

Answer any three questions as pithily as possible, but don't be too brief, and number your answers.

SECTION ON ANATOMY.

Dr. C. W. Rodgers, Staunton, Va., Examiner.
(Answer three of the following blocks.)

I.—Give the origin, insertion and action of the following muscles: (1) *Plastisma-myoides*; (2) *genio-hyo-glossus*; (3) *latissimus dorsi*; (4) *quadratus lumborum*; (5) *pronator-radii-teres*; (6) *flexor sublimis digitorum*.

II.—(1) What is the size of the heart? (2) What is its position in the chest? (3) Describe the right auricle; (4) describe the left ventricle.

III.—(1) What nerves unite to form the brachial plexus? (2) What is their arrangement in the plexus? (3) Names its branches of distribution.

IV.—Describe the stomach under the following heads: (1) Location; (2) size; (3) shape; (4) curvatures; (5) orifices; (6) coats; (7) blood supply; (8) nerve supply.

ALPHABETICALLY ARRANGED LIST OF APPLICANTS FOR LICENSE TO PRACTICE MEDICINE, SURGERY, ETC., WHO PASSED SATISFACTORY EXAMINATIONS BEFORE THE MEDICAL EXAMINING BOARD OF VIRGINIA DURING ITS SESSION JUNE 22-25, 1903, HELD AT RICHMOND, VA.

Allen, John S., Low Moor, Va., Univ. of Va., 1903.
Armentrout, John F., Staunton, Va., Univ. of Md., 1903.

- Beckwith, J. R., Petersburg, Va., Univ. of Va., 1899.
 Biedler, J. M., Tenth Legion, Va., Univ. Col. of Med., 1903.
 Bitzer, E. W., Leesburg, Va., Univ. of Va., 1903.
 Boyce, W. H., Norfolk, Va., Med. Col. of Va., 1903.
 Brunk, O. C., Harrisonburg, Va., Univ. of Va., 1903.
 Bullard, Irene Ballou, Radford, Va., Univ. of Mich., 1903.
 Burton, R. E., Petersburg, Va., Leonard Med. Col., 1903.
 Campbell, W. A., Richmond, Va., Univ. Col. of Med., 1903.
 Carter, C. L., Chatham, Va., Univ. Col. of Med., 1903.
 Carter H. P., Lynchburg, Va., Univ. of Md., 1903.
 Coleman, Claude C., Welch's, Va., Med. Col. of Va., 1903.
 Colley, T. J., Clintwood, Va., Univ. Col. of Med., 1901.
 Cook, Henry W., Richmond, Va., Johns Hopkins Univ., 1902.
 Crump, A. C., Richmond, Va., Univ. Col. of Med., 1903.
 Crute, C. B., Farmville, Va., Univ. of the South, 1903.
 Davies, R. H., Richmond, Va., Univ. of Boston, 1903.
 Davis, Joseph T., Sutherlin, Va., Univ. Col. of Med., 1903.
 Dearthmont, Chas. O., Boyce, Va., Univ. Col. of Med., 1903.
 Downey, F. C., Edinburg, Va., Baltimore Univ., 1898.
 Drake, J. A., Jr., Clarksville, Va., Med. Col. of Va., 1903.
 Edmond, Courtney, Millboro, Va., Univ. Col. of Med., 1903.
 Elliott, F. G., Portsmouth, Va., Leonard Med. Col., 1903.
 Ferguson, Geo. R., Richmond, Va., Howard Univ., 1903.
 Giles, J. C., Chatham, Va., Univ. Col. of Med., 1903.
 Gill, Wm. W., Petersburg, Va., Univ. Col. of Med., 1903.
 Gilmer, B. H., Island Ford, Va., Univ. Col. of Med., 1903.
 Graves, Geo. B., Hurt, Va., Univ. of the South, 1903.
 Graybill, P. K., Richmond, Va., Univ. Col. of Med., 1903.
 Hamner, Geo. P., Fabers Mills, Va., Univ. of Va., 1903.
 Harrison, John S., Elizabeth City, N. C., Med. Col. of Va., 1903.
 Haskins, R. R., Newport News, Va., Med. Col. of Va., 1903.
 Head, L. J., Penola, Va., Univ. Col. of Med., 1903.
 Hogshead, J. McChesney, Brook Hill, Va., Univ. Col. of Med., 1903.
 Hopewell, H. T., Edinburg, Va., Md. Med. Col., 1903.
 Horton, M. C., Dewitt, Va., Univ. Col. of Med., 1903.
 Jameson, Waller, Roanoke, Va., Univ. of Va., 1903.
 Jett, Sam'l G., Floyd, Va., Univ. of the South, 1903.
 Johnson, T. H., Radford, Va., Univ. Col. of Med., 1903.
 Justice, H. B., Low Moor, Va., Hahnman Med. Col., Pa., 1894.
 Kellam, Claude D., Norfolk, Va., Univ. Col. of Med., 1903.
 Kellam, Harry, New York, N. Y., Med. Col. of Va., 1903.
 Lankford, B., Norfolk, Va., Univ. of Va., 1903.
 Lee, W. Otwa, Danville, Va., Univ. Col. of Med., 1903.
 Lewis, H. W., Culpeper, Va., Univ. Col. of Med., 1903.
 Lewis, J. A., Richmond, Va., Leonard Med. Col., 1903.
 Lloyd, John J., Lynchburg, Va., Univ. of Va., 1903.
 Long, Jas. A., Port Republic, Va., Md. Med. Col., 1903.
 Mallory, Wm. J., Washington, D. C., Columbian Univ., 1903.
 Mapp, Wm. R., Eastville, Va., Leonard Med. Col., 1896.
 Mathews, R. J., Portsmouth, Va., Howard Univ., 1902.
 Miles, H. Morgan, Wise, Va., Louisville Med. Col., 1890.
 Miller, Thomas, Port Republic, Va., Md. Med. Col., 1903.
 Moomaw, Wm. C., Cloverdale, Va., Univ. of Va., 1903.
 Oldham, M. C., Farnham, Va., Univ. Col. of Med., 1903.
 Owen, John A., Turberville, Va., Univ. of Va., 1903.
 Pharr, J. R., Sinking Creek, Va., Med. Col. of Va., 1903.
 Pilant, J. A., Richmond, Va., Med. Col. of Va., 1903.
 Pretlow, Thos. G., Richmond, Va., Univ. Col. of Med., 1903.
 Proctor, J. P., Drake's Branch, Va., Univ. Col. of Med., 1903.
 Rawlings, J. Henry, Lynchburg, Va., Univ. of Va., 1898.
 Reaburn, Geo. W., Fincastle, Va., Univ. of Louisville, 1889.
 Renn, Geo. A., Norfolk, Va., Univ. of N. Y., 1889.
 Rex, J. P., Richmond, Va., Med. Col. of Va., 1903.
 Ridley, F. T., Portsmouth, Va., Univ. of Va., 1903.
 Rucker, M. P., Manchester, Va., Johns Hopkins Univ., 1903.
 Saunders, W. H., Roanoke, Va., Univ. Col. of Med., 1903.
 Sawyer, W. W., Great Bridge, Va., Univ. of Md., 1902.
 Schroeder, Wm. C., Portsmouth, Va., Univ. of Va., 1899.
 Shumate, F. T., Athens, W. Va., Tulane Univ., 1903.
 Slaughter, H. C., Danville, Va., Univ. Col. of Med., 1903.
 Slusher, W. C., Floyd, Va., Univ. of the South, 1903.
 Snowden, Edgar, Washington, D. C., Columbian Univ., 1903.
 Spitler, H. A., Petersburg, Va., Univ. Col. of Med., 1903.
 Starke, E. D., Riverton, Va., Med. Col. of Va., 1903.
 Stone, H. B., Martinsville, Va., Med. Col. of Va., 1903.
 Strickland, Edward F., Bathania, N. C., Univ. of N. Y., 1897.
 Strohecker, T. H., Davidson College, N. C., N. C. Med. Col., 1902.
 Stuart, Geo. C., Summit, Va., Phys. and Surg., Baltimore, 1878.
 Swimley, Wm. H., Winchester, Va., Cinn. Col., M. and S., 1876.
 Taylor, H. M., Lancaster, Fla., Atlanta Phys. and Surg., 1903.
 Taylor, Lewis H., Washington, D. C., Columbian Univ., 1903.
 Thomas, C. W., Charity, Va., Med. Col. of Va., 1903.
 Trigg, Daniel, Jr., Abingdon, Va., Med. Col. of Va., 1903.
 Tucker, Chas. C., Blackstone, Va., Univ. Col. of Med., 1903.
 Tucker, C. W., Evergreen, Va., Med. Col. of Va., 1903.
 Valz, E. V., Staunton, Va., Univ. of Va., 1903.
 Via, Cary E., Newport News, Va., Univ. Col. of Med., 1903.
 Walker, M. M., Montross, Va., Univ. of Md., 1867.
 Walker, W. E., Richmond, Va., Med. Col. of Va., 1903.
 Watts, C. N., Scarboro, W. Va., Univ. of the South, 1900.
 Weaver, A. A., Richmond, Va., Univ. Col. of Med., 1903.
 Wilkins, Robt. Lee, Alexandria, Va., Univ. of Va., 1901.
 Williams, C. B., Elizabeth City, N. C., Univ. Col. of Med., 1903.
 Williams, E. R., Hayfield, Va., Univ. Col. of Med., 1903.
 Williams, Herbert B., Gladys, Va., Med. Col. of Va., 1903.
 Willis, E. Y., Lignum, Va., Med. Col. of Va., 1903.
 Winston, J. W., Bowling Green, Va., Univ. of Va., 1903.

**INSTITUTIONS REPRESENTED BY APPLICANTS
WHO CAME BEFORE THE
MEDICAL EXAMINING BOARD OF VIRGINIA,
SPRING SESSION AT RICHMOND, VA.,
June 22-25, 1903.**

	Total Number of Applicants from each College.	Total Number of Applicants Licensed from each College.	Total Number of Applicants Rejected from each College.	Partial Examination.	Withdrawn	Incomplete.
University College of Medicine, Richmond, Va.	32	30	1	..	..	1
Medical College of Virginia	23	17	5	..	..	1
Columbian University, D. C.	4	3	1	..	..
University of Michigan	1	1				
North Carolina Medical College	1	1				
University of Boston	1	1				
Howard University	2	2				
Leonard Medical College	7	4	3			
John Hopkins University	2	2				
Physicians and Surgeons, Baltimore	1	1				
Tulane University	1	1				
University of Virginia	19	16	3			
Baltimore University	2	1	1			
University of the South	7	5	2			
Baltimore Medical College	2	..	1	..	1*	
Wurzburg University, Germany (Wurzburg)	1	..	1	..	1	
University of Maryland	7	4	2	..		
Maryland Medical College	5	3	2			
Cincinnati College, M. & S.	1	1				
Atlanta, Physicians & Surgeons	1	1				
University of Louisville	1	1				
Louisville Medical College	2	1	1			
Hahnman Medical College, Pennsylvania	1	1				
University of New York	2	2				
Non-graduates taking partial examination	70					
Total	196	99	22	70	3	2

* On account of sickness.

**INSTITUTIONS REPRESENTED BY THE APPLICANTS
BEFORE THE
MEDICAL EXAMINING BOARD OF VIRGINIA,
FROM THE ORGANIZATION OF THE BOARD,
JANUARY 1, 1885, TO JUNE 25, 1903,**

	Total Number from each Institution.	Total Number Licensed First Examination.	Total Number Rejected First Examination.	Licensed on Second Examination.	Rejected Second Examination.	Licensed Third Examination.	Rejected Third Examination.	Licensed Fourth Examination.	Rejected Fourth Examination.	Licensed Fifth Examination.	Rejected Fifth Examination.	Incomplete or Withdrawn.	Partial examination.
Total number before Board from organization to June 25-28, 1900	1641	1157	426	85	60	18	21	2	21	..	..	30	13
Medical College of Virginia	73	41	11	18	1	3	3	..	..	1	..		
University of Virginia	57	40	4	10	2	1	1	..	..	..	..
University College of Medicine, Richmond, Va.	84	66	10	14	2	..	..	..	..	..	..
College of Physicians and Surgeons, Baltimore	9	8	..	..	..	1	..	..	..	..	..
College of Physicians and Surgeons, New York	4	4	..	..	..	..	..	..	..	..	..
College of Physicians and Surgeons, Atlanta, Ga.	5	2	2	2	..	..	..	..	..	..	..
University of Maryland	25	18	3	2	..	..	..	..	..	..	..	2	
Baltimore University	8	3	5	..	..	..	..	..	..	..	..	1	
Maryland Medical College	14	7	6	2	..	..	..	..	..	..	..
Woman's Medical College of Pennsylvania	1	1	..	..	..	..	..	..	..	..	..
Woman's Medical College of Baltimore	1	1	..	..	..	..	..	..	..	..	..
Jefferson Medical College	5	4	1	..	..	..	..	..	..	..	..
University of the South	25	9	12	8	2	2	..	..	..	..	..
Leonard Medical College	20	5	10	7	1	2	..	..	..	..	..
Howard Medical College	8	5	3	..	..	..	..	..	..	..	..
Medical College of South Carolina	3	1	1	1	..	..	..	..	..	..	..
Tennessee Medical College	2	2	..	..	..	..	..	..	..	..	..
Vanderbilt's University	2	1	1	..	1	1	..	..	..	..	..
Baltimore Medical College	7	2	4	..	1	..	..	..	..	..	..	1	
Georgetown College, Washington, D. C.	2	2	..	..	..	..	..	..	..	..	..
Columbian University	7	6	1	..	..	..	..	..	..	..	..
Hospital College of Medicine, Louisville	2	1	1	..	..	..	..	..	..	..	..
University of Louisville	3	1	1	1	..	..	..	..	..	..	..
Howard University, Medical Department, District of Columbia ..	4	4	1	..	..	..	..	..	..	..	..
University of New York	4	4	..	..	..	..	..	..	..	..	..
University of Georgia	2	1	1	..	..	1	..	..	..	..	..
University of Pennsylvania	2	2	..	..	..	..	..	..	..	..	..
Louisville Medical College	4	2	1	..	1	..	..	..	..	..	..
Johns Hopkins University	4	3	1	1	..	..	..	..	..	..	..
Medical College of Ohio	1	..	1	1	..	..	..	..	..	..	..
Shaw University	1	1	..	..	..	..	..	..	..	..	..
Buffalo University	1	1	..	..	..	..	..	..	..	..	..
Long Island Medical College	2	2	..	..	..	..	..	..	..	..	..
University of Texas	1	1	..	..	..	..	..	..	..	..	..
College of Physicians and Surgeons, St. Louis	2	2	..	..	..	..	..	..	..	..	..
Hahnman Medical College	2	..	1	1	..	..	..	..	..	..	..
College of Physicians and Surgeons, Illinois	1	1	..	..	..	..	..	..	..	..	..
Kentucky School of Medicine	2	2	..	..	..	..	..	..	..	..	..
University of Berlin	1	1	..	..	..	..	..	..	..	..	..
Syracuse University	1	1	..	..	..	..	..	..	..	..	..
Claimed to be a graduate of Kentucky School of Medicine*	1	..	1	..	..	..	..	..	..	..	..
University of Michigan	1	1	..	..	..	..	..	..	..	..	..
North Carolina Medical College	1	1	..	..	..	..	..	..	..	..	..
University of Boston	1	1	..	..	..	..	..	..	..	..	..
Tulane University	1	1	..	..	..	..	..	..	..	..	..
Wurzburg University, Germany (Wurzburg)	1	..	..	..	..	..	..	..	..	..	..	1	
Cincinnati College M. & S.	1	1	..	..	..	..	..	..	..	..	..
College unknown	1	1	..	..	..	..	..	..	..	..	..
Non-Graduates taking partial examination	257	..	..	..	..	..	..	..	..	..	..	1	256
Totals	2308	1421	509	154	71	29	25	2	21	1	..	37	269

* Dean of College says he is not a graduate of his school. Applicant has since admitted to the Dean that the diploma presented was the property of another.

Nos. of examination papers.	LIST OF INSTITUTIONS Whose Graduates were Rejected by the Medical Examining Board of Va., at the Regular Spring Meeting, June 25, 1903. With Percentage Marks of each.											
	COLLEGE OF GRADUATION.											
	Hygiene and Med. Jurisprudence.	Chemistry.	Anatomy.	Physiology.	Histology, Pathology, Bacteriology.	Obstetrics and Gynecology.	Material Medicine and Therapeutics.	Practice.	Surgery.	Total.	Average Percentage	
10	University College of Medicine.....	85	75	82	78	68	63	71 1/4	71	70	669 1/4	73+
16	Columbian University.....	82	85	86	73	65	71	78 1/4	80	70	670 1/2	74+
17	Medical College of Virginia.....	75	75	76	70	70	72	80 1/2	73	75	699 1/2	74+
36	Leonard Medical College.....	83	58	76	75	65	72	63 1/4	72	49	619 1/4	65+
44	University of Virginia.....	84	70	74	78	71	69	74 1/2	75	75	670 1/2	74-
49	Baltimore University.....	90	63	56	41 1/2	50	60	48 1/2	77	29	524 1/2	58+
52	Medical College of Virginia.....	80	80	69	68	77 1/2	69	78 1/2	77	72	660 1/2	72+
55	Leonard Medical College.....	80	72	68	78	62	69 1/2	69	72	77 1/2	642	71-
78	University of Virginia.....	85	64	79	75 1/2	73	75 1/2	76	72	84	670	74-
97	Baltimore Medical College.....	80	77	69	68	67	67 1/2	65	75	62 1/2	630 1/2	70+
100	Maryland Medical College.....	79	75	70	60	70	72	81	67 1/2			
105	University of Maryland.....	90	80	80	78	74	60 1/2	76 1/2	45	79	654	72+
106	Leonard Medical College.....	80	38	43	60 1/2	50	61	45 1/4	58	65	440 1/4	55X
110	University of Virginia.....	82	75	70	72	80	67 1/2	70 1/2	75	55	624	70X
118	University of Maryland.....	60	85	85	85	60	85	41	60	60	630	79
141	Maryland Medical College.....	85	65	73	65	55	73	67	78	32 1/2	613 1/2	65X
154	Medical College of Virginia.....	75	70	76	71	65	71	75	79	70	682	72X
157	Medical College of Virginia.....	75	70	81	70	80	66	74	71	80	697	74X
160	University of the South.....	75	75	62	50	60	60 1/2	60 1/2	80	63	571 1/4	61X
169	University of the South.....	75	80	39	75	50	72	85 1/2	77	70	643 1/2	71X
172	Medical College of Virginia.....	80	75	71	80	80	75	78	73	80	672	74X
188	Louisville Medical College.....	85	80	85	87	50	85	70	80	50	612	68

Analyses, Selections, Etc.

Some Improvements in the Method of Local Analgesia.

A clinical lecture with the above title, delivered at University College Hospital, London, July 11, 1903, by Arthur E. J. Barker, F. R. C. S., Eng., appears in *The Lancet* for July 25, 1903:

Several points must be borne in mind, among them the mechanical and physical difficulties in infiltrating all the nerves supplying an extensive field of operation. To inject the whole area so as to reach all its nerves would mean in many cases the use of much more of the toxic drug than is necessary, and in some cases so much as to be dangerous.

The author refers to certain observations by Braun, of Leipsic, on a method of overcoming the drawbacks incident to the usual mode of producing local anesthesia. This method is based upon the old experience that *anything which retards or diminishes the circulation of the blood in a part enhances the potency of the analgesic agent*. Experiments were made with adrenalin, a very small quantity of which was injected with B eucaïne (or cocaine) into the author's own arm, and subsequently into the arms of numerous patients. After the lapse of twenty minutes the part was quite blanched and wholly insensitive to pain, remaining so for

about two hours. Adrenalin, alone, used in this way had no analgesic effect, while the results of the use of the combined solutions of B eucaïne and adrenalin were far superior to those produced by B eucaïne alone.

The most convenient way to prepare the solution is as follows: Powders each containing 0.2 gramme (3 grains) of B eucaïne and 0.8 gramme (12 grains) of pure sodium chloride are kept in thick glazed paper, ready for use. When needed one powder is dissolved in 100 c. c. (3 1/2 fluid ounces) of boiling distilled water, and 1 c. c. of Parke, Davis & Co.'s solution adrenalin chloride is added when the fluid is cool. The solution is left in the Jena glass beaker in which it has been boiled, which is carefully covered and placed in a vessel of warm water to keep it at blood heat.

The injection is made by means of a simple syringe of glass and metal of 10 c. c. capacity, with rubber washers, which can be sterilized by boiling.

To illustrate his method, the author describes in detail the performance of an operation for the radical cure of inguinal hernia. The hernia is first reduced and the index finger is thrust into the external ring as far as possible. Along this finger the needle is entered and the inguinal canal is filled with 10 c. c. of the solution. An endeavor is made to inject it all around the neck of the sac, so as to reach the genital branch of the genito-crural nerve. The needle is then

entered at the external end of the line of incision in the skin, and is made to infiltrate the superficial layers of the latter down to the root of the scrotum, making the resulting wheel at least an inch longer at each end than the incision is to be. Injections are then made at a point half an inch to the inner side of the anterior superior spine of the ilium, the needle being thrust towards the ilio-inguinal nerve, and at a point about one inch above the middle of Poupart's ligament, where the ilio-hypogastric nerve is most conveniently met. Then the thigh is flexed and another syringeful is injected along the ramus of the pubis and the root of the scrotum or labium.

It is necessary to wait twenty minutes after the last injection for the full effect of the adrenalin to develop. The whole field of operation should be blanched and insensitive to pricks, but not to touch—analgesia, not anesthesia. The incision may then be made with confidence that no pain will be felt. The absence of oozing of blood is noticed. Only large vessels bleed at all.

Success depends upon a mastery of the principles, and practice in the details of the method. It is not enough to inject the fluid under the skin generally. Due regard must be had to the position and course of the nerves supplying the structures to be dealt with. The adrenalin compound, by slowing the circulation through the part prevents the anesthetic agent from being rapidly washed away. The writer has used this method in thirty operations, including the radical cure of hernia, strangulated hernia, orchidectomy, removal of varicose veins, psoas abscess, loose body in knee, tumor of neck (actinomycosis), colotomy, Thiersch skin grafting, and cystic adenoma of the thyroid.

Colpeurynter—Its Proper Method of Use.

According to *Woman's Medical Journal*, July 1903, Kusser suggest (*Zentralblatt für Gynäkologie*), a simple method for employing the rubber bag for inducing labor. Ordinarily, such bags are filled with a syringe, which requires constant supervision to prevent their premature expulsion as the cervix dilates. Kurrer, after introducing the bag, connects its tube with an ordinary irrigator filled with sterile salt solution, and suspended six feet above the level of the bed. This keeps the colpeurynter distended at a sufficient pressure, and makes it keep pace with the relaxation of the cervix, so that it cannot be expelled until dilation is effected.

Inferences from Examinations of Gastric Contents.

Dr. Elliott P. Joslin, Boston, read a paper on this subject before the Massachusetts Medical Society, June 9, 1903 (*Boston Med. and Surg. Jour.*, August 27, 1903), which simplifies this matter. He says that the gastric contents are examined chiefly to aid in the diagnosis and treatment of catarrh, dilatation, ulcer, cancer and neuroses of the stomach or to obtain proof that it is in a healthy state. In reality diagnosis of the various diseases of the stomach is far easier than is usually thought. The rule of exclusion can be used to great advantage.

The data upon which diagnosis are based are also few, some six in number. Five of these can usually be detected by gross observation, while chemical tests for the remaining are extremely simple. The subjects which admit of discussion to-day are: (1) Gastric motility; (2) gastric secretion; (3) gastric fermentation; (4) mucus; (5) blood; (6) pus.

Another function of the stomach—absorption—may be disregarded, because so little takes place through the stomach walls. Practically no water is absorbed. When water enters the stomach, it is either expelled through the pylorus, the cardiac orifice or remains. There are exceptions to this rule of non-absorption of food in the stomach. Sugar and peptones are absorbed to a slight extent, varying with the concentration of the solution. Alcohol is readily absorbed. When alcohol is absorbed from the stomach, water is secreted into it in more than equivalent volume.

(1) *Gastric Motility*.—The power to expel its contents is the most important function of the stomach. If secretion utterly fails, there occurs only a moderate impairment of digestion. This is due to the compensatory action of other digestive organs. Let gastric motility fail, however, and distressing, urgent or fatal consequences invariably ensue.

Gastric motility is disturbed by various means. Perhaps the commonest is that due to weakness of the gastric muscles themselves. This may form part of a general muscular weakness, and is often associated with displacement of the stomach and frequently of other organs. Such displacement increases the work to be done by the stomach because the pylorus is more firmly fixed than the rest of the organ and the food must be raised before it is expelled. A vicious circle is the result.

Another cause less generally appreciated is

interference with the continuity of the inner wall of the stomach. Such a state is brought about by ulcer or cancer, even when they do not obstruct the pylorus. Interference with motility in such cases is not extreme, but is quite constant. Detection of slight degrees of disturbed motility is therefore important and a suspicious sign.

Obstruction to passage of food through the pylorus is the most obvious cause of disturbed muscular action in the stomach. At first obstruction usually leads to extra efforts on the part of the muscle walls. This is apparent to the patient by sensations, and to the physician by observance of peristalsis. In advanced stages, exhaustion of the muscles apparently succeeds to active paristalsis and extreme grades of dilatation of the stomach result. It is often impossible to determine the cause of a pyloric obstruction at a first visit, and it is unwise to attempt a diagnosis. Repeated observation of the behavior of the stomach under varying conditions is essential. In many instances time alone will determine whether the stricture is functional, being due to spasm, or organic from the presence of a scar, ulcer, cancer or other less common causes.

Determination of gastric motility is the most important test in diagnosis and treatment of disorders of the stomach. Frequently proof of its derangement is afforded by the story of the patient. Food is vomited which has been eaten more than seven hours previously, or quantities of food are vomited which are so large that they are directly suggestive of dilatation of the stomach. This is acute or chronic according to the frequency with which such vomiting has occurred. A degree of muscular disturbance sufficient to produce such symptoms is rare, but when it occurs it is not uncommonly overlooked. It must not bias the practitioner, however, in favor of malignant disease any more than marked loss of weight in an individual with indigestion.

In contrast with this crude method of estimating gastric motility is the accurate test by passage of the stomach tube into the fasting stomach. The fasting stomach should be empty. If food is obtained from it seven hours after a meal, there is disturbance of gastric motility. This examination is the simplest and most valuable of all examinations of the stomach. In the first instance, the manipulation of the tube is easier with the fasting stomach than after a test meal. In the next place, contents so removed are more readily examined. Inspection

alone will determine the presence of food, secretion, fermentation, mucus, blood and pus—the essentials for gastric diagnosis. Too much cannot be said of the value of the examination of the fasting stomach.

Conclusions regarding gastric motility may be reached by measuring the quantity of food removed from the stomach one hour after administration of an Ewald test breakfast. The slice and a half of bread and the glass and a half of water of which this consists should leave a residue of not more than 3 oz. when removed under the above conditions. Excess of this quantity suggests deranged muscular activity. Another method of reaching the same result is Hemminger's test meal. This consists of one small piece of beef ($2\frac{2}{3}$ oz.), one soft boiled egg, 1 oz. boiled rice, one-half pint milk and a piece of bread. Four to five hours later an Ewald test breakfast is given and the contents removed in one hour. Complete disappearance of the earlier meal points to normal motility. Gastric motility has been tested also by directing the patient to eat at night a few spoonfuls of dried English currants. These would not be found on the following morning in a healthy stomach.

Normal motility is present in two diseases of the stomach—gastric catarrh and in the group of cases included under the term "achylia gastrica." In the latter excessive motility has been supposed to be present. This idea may have arisen from the fact that undigested fragments of food are expelled with difficulty through the stomach tube. The stomach is then considered empty when this is really not the case. The water has passed on, but the solid particles of undigested food remain and can be obtained by prolonged expression, aspiration or lavage.

(2) *Gastric Secretion.*—The healthy stomach produces about three pints of gastric juice in twenty-four hours. Ordinarily this passes on with the food into the intestine without causing disturbance. It is obvious, however, from what has been said that such quantities of secretion can cause many symptoms. Much confusion exists between slight degrees of deficient motility and excessive production of gastric juice. But the pronounced states of either are clear. When the secretory function is normal, the fasting stomach will be empty; if hypersecretion is present, varying quantities of gastric juice up to several ounces can be removed from the fasting organ. Increased secretion of gastric juice

is pathognomonic of no single disease. It most frequently occurs as a neurosis in connection with an overproduction of hydrochloric acid. It is a precursor of ulcer of the stomach and is the signal for prophylactic treatment. It accompanies ulcer.

The constituents of gastric secretion which are most important for recognition are hydrochloric acid and pepsin. Their presence in normal quantities may be inferred with great probability from the gross appearance of an Ewald test breakfast. Such contents removed from a normal stomach look "well digested." If gastric secretion is absent the contents resemble closely a mixture of bread and water. It is not safe, however, to rely wholly on gross appearances, for occasionally with excessive amounts of hydrochloric acid a somewhat similar condition is produced.

The safest test for hydrochloric acid is with Gunzburg's reagent.¹ This is performed by slowly heating a few drops of this solution with an equal amount of the stomach contents. A red color develops. Another test is with Congo red paper.² This turns blue when moistened with a solution containing free hydrochloric acid. The development of a brownish color with Congo red denotes the presence of some organic acid. Congo red paper is very useful in a general practice because it requires no apparatus. Following a suggestion of Dr. Pfaff, it can be prepared in different strengths, and with these an approximate idea of the per cent. of free hydrochloric acid in the stomach can be obtained.

Excess of hydrochloric acid occurs most commonly as a neurosis. It is the torment of the nervous dyspeptic and the nervously tired-out individual. Like hypersecretion it frequently precedes ulcer of the stomach and generally accompanies the condition when established. Often hyperchlorhydria occurs in dilatation of the stomach due to a benignant stenosis of the

pylorus. In such cases the stagnant food appears to call it forth. Ulcer is usually associated with the presence of free hydrochloric acid, often in excessive amounts. In cancer, free hydrochloric acid is the exception. It is by no means seldom, however, that chronic ulcer exists without free hydrochloric acid, and that cancer is accompanied by free hydrochloric acid. In the latter instance the cancer has usually developed from an old ulcer—a much rarer condition than supposed.

Hydrochloric acid is diminished in catarrh of the stomach to a greater or less extent according to the severity of the disease. It is completely absent in atrophy of the mucous membrane and sometimes absent when no atrophy exists, perhaps due to a secretory neurosis. Patients in whose gastric contents no hydrochloric acid can be found after repeated trials are said to have achylia gastrica. (Strictly speaking, the absence or marked diminution of pepsin and renin also should be proven to establish this condition.) The acidity of such contents hardly suffices to react red with litmus. The gross appearance of an Ewald test breakfast removed from a patient with achylia gastrica resembles a mixture of bread and water, so incomplete is its digestion. It is a rule for the hydrochloric acid to be absent in cancer.

Pepsin varies in gastric juice to a greater or less extent with the hydrochloric acid. In most examinations of stomach contents the tests for it can be omitted. It can be demonstrated as follows: Add a portion of the white of a hard-boiled egg of about the size of a dime to 2 dr. of filtered gastric juice. Keep at body temperature. The egg normally is digested or disintegrated in two to six hours. If free hydrochloric acid is not present, add dilute hydrochloric acid one drop at a time until its appearance is shown by Gunzburg's or the Congo red test.

(3) *Gastric Fermentation*.—Fermentation in the stomach is proof of diminished motility. It is recognized by the appearance of three layers in the gastric contents, which form about a quarter of an hour after their removal. This is best shown by placing the contents in a glass. The lower layer consists of partially digested food, the middle layer is liquid and contains the soluble products of digestion, while the upper is frothy, due to admixture of gas (chiefly carbonic acid) with small particles of food. The exciting agent of the fermentation varies, and can be isolated. Especial interest attaches at present to but two sorts of fermentation—that

¹Gunzburg's Phloroglucin-Vanillin Test.

Phloroglucin	2
Vanillin	1
Alcohol	30

²Filter paper saturated with aqueous solutions of Congo red of the following strengths will react with the given per cents of free hydrochloric acid:

Congo Red Per cent.	Hydrochloric Acid Per cent.
0.001	0.200
0.00175	0.150
0.0025	0.075
0.0062	0.050
0.01	0.025
0.05	0.01

caused by *sarcinæ* and that due to the lactic acid bacillus. *Sarcinæ* grow abundantly in the presence of hydrochloric acid, and *lactic acid bacilli* only in its absence. The presence of *sarcinæ*, therefore, implies fermentation in a stomach which is still secreting hydrochloric acid, while lactic acid implies that no hydrochloric acid is being produced. In both, motor insufficiency is present. Sarcinous fermentation has a peculiar odor which is so distinctive that when once appreciated it is easily recognized. Sense of smell alone can in this way lead to a conclusion that hydrochloric acid is present. Conclusive proof is afforded by detection of the "cotton bale" shaped *sarcinæ* under the microscope. Lactic acid is demonstrated by the distinct appearance of a canary yellow color on the addition of filtered gastric contents to a nearly colorless solution of ferric chloride. Demonstration of *sarcinæ* or lactic acid in a stomach contents adds, therefore, nothing new to our knowledge. It is simply another method of showing that deficient motility, associated with or without hydrochloric acid, exists.

(4) *Mucus*.—Mucus is present in the stomach when there is catarrh of that organ. Acute or chronic gastric catarrh exists only when associated with mucus. The acute cases attract little attention, for the duration of the disease is so short that an examination of the stomach is seldom necessary. Chronic catarrh of the stomach is a rare disease, notwithstanding it is so common in the minds of the laity, and in the diagnoses of the profession. In a recent four months' out-patient female medical service in which about one thousand new patients were seen, only one typical case of chronic gastric catarrh was recognized. In fact, one of the decided advantages of the examination of stomach contents is the opportunity it affords of disabusing the patient's mind of the idea that he or she has chronic catarrh. On the other hand, catarrh may exist with cancer or dilatation of the stomach. Mucus obtained from the mouth, throat and esophagus during passage of the stomach tube should always be distinguished from mucus formed in the stomach. Gastric mucus is intimately mixed with the food; other mucus is not. Mucus is most easily detected in the fasting stomach.

(5) *Blood*.—Blood is not uncommonly obtained from the fasting stomach. Cancer is the disease most uniformly associated with it, for either a little blood is present in the stomach before the introduction of the tube or is set free

by the irritation of the tube itself. Ulcer behaves similarly. Very small quantities or little clots of blood are frequently obtained from patients with achylia gastrica. These three diseases can often be differentiated by the state of gastric motility and the hydrochloric acid. Blood may also be obtained from the healthy stomach by too forcible straining and struggling on the patient's part or too powerful aspiration of the contents by the doctor. Coffee ground vomitus perhaps is more commonly associated with cancer than with ulcer, but it is by no means proof of it. It may occur daily for a week in ulcer.

(6) *Pus*.—Pus is common in any gastric catarrh. It is frequently met with in fasting stomach of patients with cancer or ulcer, and so in the absence of mucus gives valuable evidence.

Diseases of the stomach can be treated empirically or with a certain degree of scientific accuracy. The scientific method is usually successful, while empiricism favors a migratory tendency on the part of the patient. If empiricism is successful and the patient is cured, in the end more real harm results, for the doctor is encouraged to repeat his lucky experiment and his medical progress thereby comes to an end.

The examination of gastric contents is often neglected because it is thought to be too difficult and too time-consuming. These views are erroneous. The examination requires no more time than the examination of the urine, and is far simpler. In fact, the gross examination of the gastric contents furnishes the most valuable data of all, and these can be recognized almost at a glance. There is no necessity for the busy practitioner to titrate the per cent. of hydrochloric acid in the gastric contents. It is far more important that he should determine whether the organ contains food and secretion in the fasting condition, and that he should make the simple tests necessary for their examination. More important still is the need for a proper interpretation of the results so obtained.

Rules are no more hard and fast in this branch of medicine than in any other, and satisfactory deductions can only be drawn when the history of the patient, physical signs and data relative to the contents of the stomach are considered together.

In discussion, Dr. R. F. Chase, of Brookline, said that when a patient comes for examination of the stomach, he should not have eaten any-

thing for at least six hours. With a fasting stomach at once proceed to give a test meal, and later examine the gastric contents obtained therefrom. Or, should it seem preferable, obtain the fasting contents (if there are any), then inflate and determine the size and position of the stomach. Either part or the whole of such an examination may be made at the first visit, providing the patient comes with a fasting stomach. Whereas if he comes with a full stomach none of these tests can be conveniently carried out at the first visit.

Dr. Joslin has said that several examinations may be necessary to establish a diagnosis. Dr. Chase particularly emphasizes the importance of this point, because there are physicians who have the impression that one chemical examination of gastric contents is sufficient to enable one to make a diagnosis. Such, however, is not the case. Besides the chemical examination of the gastric contents, the size, shape and motility of the stomach must be determined in all cases, and in many cases new phases of a disease appear which require prolonged study that they may be recognized and properly treated.

The average amount of gastric contents obtained one hour after the administration of an Ewald test meal is 90 cc., or 3 oz.—a very fair average, but it is only an average, the maximum and minimum normal limits being very wide varying from about 20 to 150 cc. A healthy student recently yielded, on several successive days, from 120 to 160 cc. of gastric contents. On a day preceding a school examination which he was to take, Dr. Chase obtained only 10 cc. one hour after the Ewald meal, and this gastric juice contained no free HCl, whereas on the previous examinations the free HCl had always been normal. This temporary suppression of the gastric secretion was attributed solely to nervousness arising from anxiety over his pending school examination.

Small amounts of gastric contents are obtained in diminished secretion, in hypermotility of the stomach and in cases of patent or lax pylorus. In these conditions it is frequently necessary to introduce the stomach tube within thirty or forty minutes after giving the Ewald meal to obtain any contents for examination.

Failure to obtain the average amount of gastric contents one hour after the Ewald meal does not necessarily indicate the existence of one of the conditions just mentioned; it may mean that the entire contents of the stomach have not been removed.

Lavage of the stomach will clear up this point, because if the contents have not been entirely removed crumbs of bread and cloudiness of the wash water will be observed. Formerly he used a Davidson's syringe bulb in evacuating the stomach contents and in 20 to 30 per cent. of all cases he obtained small amounts of blood. He now uses a different bulb, and does not encounter blood in more than 2 to 4 per cent. of all patients. Small amounts of blood, however, are frequently of no significance.

Mucus must *not* be confounded with saliva, which, as a rule, runs freely down the *outside* of the tube. The former is recognized by its stringy nature and comes, of course, only from the *inside* of the tube; it is also well seen when pouring the contents from one vessel into another.

Excepting the detection of blood, or food, which has been eaten one or two days previous, an examination of the vomitus from a patient does not aid one much in the diagnosis of gastric disease.

Dr. Joslin, during a three months' hospital service, failed to encounter one case of chronic gastritis. During a present ten weeks' service Dr. Chase also did not meet one case of chronic gastritis. This disease of the stomach, of which we hear so much, is not nearly so common as is generally supposed.

Causation of Cancer, and Its Medicinal Treatment.

Dr. Robert Bell does not think cancer (*Med. Record*, August 15, 1903) due to a parasite. It is a disease of civilized life, unknown among savages and those who lead a simple life, hence it is preventable. We have an example of what is essentially epithelioma in a wart, which assumes a malignant character only when subjected to rough usage.

Cancer of the cervix uteri is contingent upon endometritis, with its concomitant neurasthenia and prostration of general functional activity. The integrity of the epithelium depends largely upon an unimpaired thyroid, and there is direct relationship between the latter and the uterus. The thyroid secretion renders intestinal toxins innocuous, and it is to this that its beneficial action is due. Saccharomycetes in the blood transform these toxins into uric acid, interfering with cell metabolism, and thus predisposing to cancer. Meat diet tends to produce intestinal toxins. In cancer, it is advisable to abstain from highly nitrogenous food, relieve constipa-

tion, administer thyroid extract with salicylates to destroy the saccharomycetes, and remove all sources of irritation. If the disease has not advanced too far, it will yield to this treatment.

Diagnosis of Cancer of the Stomach.

Dr. Ettinger (*Semaine Medicale*, July 1, 1903) notes the following as diagnostic of cancer following simple gastric ulcer: Noting that cancerous degeneration comes on insidiously, he calls attention:

1. Presence of constant pain, notwithstanding careful regime, diet and proper medication, with increasing intensity is almost pathognomonic of cancer.

2. Lack of appetite and refusal of food are noticed in cancer, which are not usual in gastric ulcer.

3. Examination of the vomitus sometimes help to distinguish between the two.

4. The presence of gastric tumor is decisive.

5. Equally important is a *hypochlorhydria* succeeding *hyperchlorhydria*.

Book Notices.

Practical Medicine Series of Year-Books. Under General Editorial Charge of GUSTAVUS P. HEAD, M. D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. *Volume VI.—General Medicine.* Edited by FRANK BILLINGS, M. S., M. D., Head of the Medical Department, and Dean of the Faculty of Rush Medical College, Chicago, and J. H. SALISBURY, M. D., Professor of Medicine, Chicago Clinical School. May, 1903. Chicago: The Year Book, Publishers. 1903. Cloth. 12mo. Pp. 316. Price, \$1.50. Price of series of ten Volumes annually, one subscription, \$7.50.

Of the several serial manuals on the progress of the medical sciences none is superior to this. The present volume on *General Medicine* includes reference to the advances made in the past year or two to just such every-day diseases that are of special importance to the general practitioner of medicine. It is the kind of work from which the system of and treatises on practice of medicine are mostly compiled. After noting important items about a number of the specific fevers, diseases of the mouth, of the stomach, of the intestines, of the pancreas, liver,

etc., are taken up. From this one of the year books, much valued information is obtainable by any practitioner. The review of typhoid fever, of paratyphoid fever, etc., forms a most excellent chapter. A good index assists in ready reference to a subject. This is a specially useful book to the general practitioner.

Manual of Obstetrics. By A. F. A. KING, A. M., M. D., Professor of Obstetrics and Diseases of Women and Children in Medical Department of Columbian University, Washington, D. C., etc. *Ninth Edition, Revised and Enlarged. With 275 Illustrations.* Lea Brothers & Co., Philadelphia and New York. 1903. Small 8vo. Pp. 622. Cloth, \$2.50 net.

This is a standard work, so written as to keep it in constant demand by the profession. In this ninth edition such additions and changes have been made as the progressive development of obstetric science seemed to require. Some errors have been corrected and obsolete methods of practice omitted. The chapter on Puerperal Septicemia has been remodelled so as to present the latest of approved opinion and practice. As an epitome of our estimate of this *Manual*, we can repeat an extract from our notice of a former edition: "From first to finish, it is thoroughly practical, concise in expression, well illustrated, and includes a statement of nearly every fact of importance" relating to the practice of obstetrics.

Treatise on Diseases of the Rectum, Anus, and Sigmoid Flexure. By JOSEPH M. MATHEWS, M. D., LL. D., President American Medical Association, 1898. Professor of Surgery and Clinical Lecturer on Diseases of the Rectum, Hospital College of Medicine, etc. *With Six Chromo-Lithographs and Numerous Illustrations. Third Edition, Revised.* New York: D. Appleton & Co. 1903. Cloth. 8vo. Pp. 589. Cloth, \$5; sheep, \$6.

This is perhaps the standard authority on the diseases of which the book treats. In its revised form, much has been added that is new and of great importance to those interested in rectal work. When decided advances have been made—as the etiology of cancer, etc.—chapters have been entirely rewritten in order to include the latest discoveries with the facts established by long experience and observation. While much of the *Treatise* is taken up in the technique of operations—some of which are original with the author—a full share of space is given to such subjects as etiology, symptomatology, diagnosis and medicinal treatment. Many use-

ful hints and prescriptions are included in the pages, which make this work of essential value to the general practitioner as well as to the surgeon and the specialist in this line of work. It is an admirable work as to substance, and as to the publisher's part. It is well indexed.

Medical Epitome Series. Edited by V. C. PEDERSEN. A. M., M. D., Instructor in Surgery and Assistant Anesthetist at New York Polyclinic Medical School and Hospital, etc. *Microscopy and Bacteriology. A Manual for Students and Practitioners.* By P. E. ARCHINARD, A. M., M. D., Demonstrator of Microscopy and Bacteriology, Tulane University of Louisiana, Medical Department. *Illustrated with 74 Engravings.* Lea Brothers & Co., Philadelphia and New York. 1903. Cloth. 12mo. Pp. 210. Price, \$1 net.

Such a book makes no claim to originality. It is a compact compend, however, of most of the latest developments in microscopy and bacteriology, and explains by text and engravings the details of technique as to the manner of using the microscope and the detection of bacteria, thus establishing the specific diagnosis of many diseases. As a review work for the practitioner who wishes to refresh himself on those subjects, or as a guide book to him in the examination for bacteria, etc., it is excellent. It is also an excellent guide book for the student at college, in following the lectures and demonstrations of his teacher. It is made especially valuable to the student and as a review book for preparation for boards of examiners because of the fulness of the section of questions appended to each chapter. It has also a good index—a matter of no little value to the owner of the book.

Text-Book of Surgery. By GEORGE EMERSON BREWER, A. M., M. D., Lecturer on Clinical Surgery at the College of Physicians and Surgeons, Columbia University, New York, etc. *Illustrated with 280 Engravings in the Text and 7 Plates in Colors and Monochrome.* Lea Brothers & Co., New York and Philadelphia. 1903. Cloth, 8vo. Pp. 706. Cloth, \$4; leather, \$5 net.

There are so many text books on surgery that the doctrine has to be applied, "let the fittest survive." If such books were intended solely for the college student, this, along with others, would be excellent in so far as the descriptions of disease or injury and their operative treatment are concerned. But a text book on surgery in this day is presumed to be for the practitioner as well, and he wants to find more in

his text book than a description of one or two methods of treating a given surgical affection; for it often happens that neither of the one or two methods suggested is applicable to the case in hand. We are disappointed to find in this newcomer for professional favor no reference to the wonderful successes of radiotherapy in such conditions as malignant growths, etc. For in the treatment of many such surgical affections the X-ray has proven itself equal to the knife in effect, and much more acceptable to the patient. No surgical hospital is now complete without an X-ray machine. Such apparatus is now in daily use in most towns and cities, and the reported results are brilliant in a large class of surgical cases. Were we to confine our notice to what we find in the book (and not extend it to the unfortunate omissions), we would say that they are good, practical and well sustained by authority and experience.

Editorial.

The Medical Society of Virginia

Will hold its 34th annual session at Roanoke, September 15, 16 and 17, 1903. It is a special request of the Committee of Arrangements that the meeting Tuesday night be called to order promptly at 7:30 o'clock, so as to allow the visiting ladies to attend a reception to them at 9:30 P. M. at Hotel Roanoke.

This session promises to be the most largely attended and the best of meetings. An unusual number of distinguished visitors and fraternal delegates are expected. We have never before seen such general, sincere interest manifested in an approaching session. Applications for Fellowship are liberally coming in from all sections of the State. All of this has been brought about by the indefatigable work of the officers and members of the Society; by the remarkably excellent programme arranged for the session, and by the hearty co-operation of the doctors of Roanoke, who have been untiring in their zeal and most cordial in their offer of hospitalities. The fact, too, that Dr. John H. Musser, of Philadelphia, one of the Honorary Fellows of the Society, and now President of the American Medical Association, is to be the leader of discussion of the subject for general discussion—

"*Diagnosis of Gastric Affections*"—with the able assistance of Dr. John C. Hemmeter, of Baltimore, whose classical work on this subject ranks him as among the world's most eminent authorities, very materially influences many in their manifest interest in the session.

We regret that the titles of several papers have been received too late for inclusion in the pamphlet announcement of the session. Among such, we note: *Sodium Chloride and its Therapy*, by Dr. Henry C. Beckett, of Scottsburg, Va.; *The Etiology of Variola*, by Dr. James W. Hunter, Jr., Norfolk, Va.; and *Physical Methods*, by Dr. Samuel G. Slaughter, Lynchburg, Va. Dr. Robert F. Williams, Richmond, Va., and Invited Guest, Dr. Charles H. Frazier, Philadelphia, Pa., have not yet indicated the titles of their papers. Other doctors have written their regrets that they did not forward titles of papers on subjects in which they are interested so as to be placed on the programme. But as it stands, what State Medical Society has ever announced a more inviting series of papers for its session?

The Medical Society of Virginia, from its organization in 1870, has always included in its membership the representative members of the profession of the State. In fact, it has been instrumental in bringing to the front talent which would otherwise have been unknown or unappreciated. Each of its sessions for many years has been marked by a grade of papers and discussions which have been memorable. This Society has also done much to elevate the standard of professional requirements. Its influences have done much in the development of medical education. The three medical colleges of the State have now a combined matriculation of near upon 1,000 students, where formerly there were scarcely 150 students. It has given strength and prominence to the four State hospitals for the insane of Virginia. It has developed a State Board of Medical Examiners that is excelled by none and equalled by few. It has shown to legislative bodies the wisdom of leaving to the profession the selection of its own Board of Examiners instead of trusting the appointments to the personal favoritism of the State political executives. Through its influence, in great part, successfully conducted private and community hospitals have been established in most of the cities of Virginia. It has kept its eye constantly on the betterment of

professional interests of the State, and has shown its power with the Legislature in nearly weeding out the various forms of quackery and charlatanry that at one time seemed to threaten with firm holds in the cities, towns and counties of the Commonwealth. Other valuable legislation is to be undertaken, and if at first we don't succeed, we will "try, try again."

The social features of the meetings have tended to strongly weld professional friendships between the doctors of the different sections of the State. Doctors come together and become personally acquainted with each other in such a way as to establish and maintain high personal regard one for another. These social features at annual meetings tend greatly to do away with the personal bickerings and unkind feelings and remarks that at one time were common in the talk of one doctor about his competitor. Doctors, by these social gatherings, are made to recognize that they are associates in the common causes of medicine and of the profession.

The social pleasures of the visitors at Roanoke during the session have been abundantly provided for. Mayor Cutchins will welcome the visitors to the city, and Dr. Merwin Branch will deliver a short address of welcome on the part of the Roanoke Medical Society. In view of the all-day trip to Fries, along "the Palisades" of New river, over a branch of the Norfolk and Western railroad, the ladies have decided not to extend the excursion to Natural Bridge, as was at one time proposed. Other receptions, etc., will be announced at the time of meeting.

In view of the large number of visitors expected it would be well for doctors proposing to attend the session to engage their rooms at one or the other of the hotels named in the programme. We have heard of some doctors engaging rooms at Blue Ridge Springs, just twelve miles from Roanoke, with trains over the Norfolk and Western convenient for going and coming. The proprietor says he will give a rate of \$2 per day for this occasion. Dr. John R. Garrett, Roanoke, Va., is chairman of the Reception Committee, and all inquiries as to hotels, boarding houses, etc., addressed to him will receive prompt attention.

A matter of deep concern that is to be considered by the Roanoke session relates to the proposed plan of reorganization of the Society. See pages 239-241, inclusive, of the *Transactions*

of the Society, 1902. We would suggest to all Fellows the propriety of carefully reading over the propositions before going to the session.

As a matter of interest relating to this question, the following local medical societies have informed the secretary of their official affiliations with the Medical Society of Virginia:

Norfolk Medical Society.
 Elizabeth City County Medical Society.
 Newport News Medical Society.
 Seaboard Medical Association.
 Richmond Academy of Medicine.
 Church Hill (Richmond) Medical Society.
 Chesterfield County Medical Society.
 Petersburg Medical Faculty.
 Fluvanna County Medical Society.
 Danville Academy of Medicine.
 Lynchburg Medical Association.
 Patrick County Medical Society.
 Roanoke Medical Society.
 Southwestern Virginia Medical Society.
 Wise County Medical Association.
 Tazewell County Medical Society.
 Rockingham County Medical Society.
 Rappahannock Valley Medical Association.

Medical Examining Board of Virginia Report.

The report of the examinations and the minutes of the session held at Richmond, Va., June 22-25, 1903, appear in this issue. The type of men composing this Board shows the great benefit of leaving the selection of its members to the medical profession. Free of all political alliances, this Board is not governed by the caprice or favoritism of executive appointment. Each one on the Board accepts his position as a trust of honor from the profession of the State, and thus far no semblance of prejudice has ever been manifested by the Board to any applicant who has a clean record.

It is mortifying to the pride of the regular profession that the necessity seems to have arisen to cast doubt on the honesty of purpose or of act of any applicant for examination for the purpose of entering upon the high calling of the medical profession. And yet such is the inevitable result when college classes renounce the honor system of former years. Then the sentiment was, "I will not cheat or defraud because such things are wrong, nor permit the same to be done by another if within my power to prevent." Then we had a profession in which all reputable doctors occupied a plane of courtesy and honest feeling and action toward another.

But with the undoing of the honor system in some of the colleges, men with a motive in view, recognizing no code of morals, feel that all is right until caught in the act of cheating. Is it any wonder that the Board of Medical Examiners of Virginia, composed of men of honor, should have considered a proposition to keep detectives in the rooms during examinations? To have adopted this course might have been a too severe reflection upon the truly honest men in the class, but that something must be done to prevent the applicants who are lost to principle from fraudulently obtaining the certificates of the Board is very evident, and to keep members of the Medical Examining Board on duty in various parts of the hall of examination seems a necessity. It is evident from the minutes of the Board that all that was reasonably suspected has not been published. The Board seems to have acted with remarkable leniency of judgment, but good men do not seek to defame character unless the evidence is beyond question. We trust that the voice of the profession will be raised as that of one man in denouncing the rascality of some applicants for examinations, and in upholding the decision of the Board to force honesty of action where they may not be able to influence honesty of purpose.

The record of the June session of the Board is before our readers. The report shows the good, bad, and indifferent work of the medical colleges of the country.

In explanation of the long table giving the "Institutions Represented by Applicants before the Medical Examining Board of Virginia from Organization of the Board, January 1, 1885, to June 22-25, 1903," it is proper to remark that after June, 1900, the Board entered upon a system of allowing non-graduates to take a partial examination—that is, examination on those tickets upon which the applicant had received certificates from colleges in undergraduate classes. Hence these "partial examinations" are not credited to the colleges from which the students come until after they have passed satisfactory examinations on all the subjects upon which the Medical Examining Board of Virginia examines. The detailed record of each such applicant is kept by the secretary and summed up when the same applicant appears for his finals before the Board, and then the colleges are respectively credited. Thus, *all the figures below the first line of figures*—showing 1,641 applicants, and 1,157 as the number who passed on first examinations, etc.—indicate the number

of applicants from the different institutions, the number who satisfactorily passed on first examination, etc., since July 1, 1900. And all of these latter figures in the different columns are to be added to those given in the first line of figures of that page, so as to get the grand totals given at the bottom of each of the columns.

Laws to Govern State Boards of Examiners.

Andrew C. Biggs, removed from Ohio to Greensboro, N. C., and commenced the practice of non-medicinal methods of healing—embracing physical culture, therapeutic suggestion, dietetics, massage and hygiene. The North Carolina Board of Examiners brought action against him for practicing medicine and surgery without license. The judge of the court sustained the Board. The North Carolina law, in effect, declares that any system of treatment is technically a system of medicine and surgery. Christian scientists, according to Biggs, can practice without examination. After his arrest, he offered to take examination in all branches pertaining to his work, but was refused the privilege unless he could show a diploma from a medical college giving at least three years' course, and even then he would have to stand examination in all branches taught in medical schools. Diploma from an osteopathic school was not recognized. Biggs proposes to appeal to the Supreme Court of North Carolina, and if that court declares the law constitutional he threatens to appeal to the United States Supreme Court.

We note this case as one among many complainants who undertakes to cure disease without proper qualifications. We cannot suppose that the Supreme Court of North Carolina will decide against its State Board of Medical Examiners. It is strange that quacks and charlatans and ignoramuses in general have not learned that it is dangerous for them to be trifling with human health and life. It is not the difference between recognized schools of practice that disqualifies one from practicing medicine or any of its branches. Homeopaths, eclectics, regulars, etc., are all on the same footing before the law. Until people become educated in anatomy, physiology, bacteriology, histology, medical chemistry, diagnosis of diseases, etc., it is a small requirement that they shall first have secured diplomas from some *reputable* college of medicine—whether it represents the regular, the homeopathic, the eclectic, or other recognized medical school. In our opinion, it is due to lack of proper information by Legislatures

which exempts so-called "Christian Scientists" from such examinations. As a class, they are quacks, playing upon the credulity of the ignorant masses. If they possess any other power than ministers of the Gospel, or pious people generally, in the cure of diseases, it is a reflection upon the churches in general, and Legislatures have no right to cast a slur upon such. All of us believe that "the earnest, effectual prayer of a righteous man availeth much." But their prayer, while recognizing that all things are possible with God, also recognizes the scriptural teaching that the *sick need the physician*. We hope that the North Carolina Board will not relent in its good work of keeping all such incompetent persons as this man Biggs confesses himself to be (*Med. Talk*, September, 1903) out of the profession of medicine.

Milk Examination in the District of Columbia.

The Medical Society of the District of Columbia has organized a Milk Commission for Washington city. This Commission suggests that a veterinary surgeon, a chemist and a bacteriologist be employed to test milk brought into the city daily for sale. The Society believes such a measure is demanded for the health of the city—especially with reference to the buying of milk for the District institutions. The Milk Commission can be made more exact and minute in its examinations of milkmen than the Health Department, whose work is rather curative than preventive. The Milk Commission recommends that all milk furnished the District of Columbia institutions shall be under contract upon bids, for which specifications shall be prepared in the office of the property clerk. The effect of the adoption of these suggestions would raise the price of milk somewhat, and therefore will have to be considered also in that aspect.

Dr. J. H. McCormick, on behalf of the Milk Commission, in his letter to the Health Commission, states that as a large proportion of the milk furnished institutions is designed for the sick or for those who have more or less impaired and feeble digestion, the latter Commission should see to it that the very best possible standard is afforded. Where supplies are furnished on contract, the keen competition to obtain the contract serves as a temptation to contractors to furnish an article below the standard. This is especially true if no inspection is required. In case milk is furnished institutions by contract it is impossible to have uniform inspections except in the manner suggested. Simple ocu-

lar inspection is in no sense a test of the purity of the standard of the milk. But the inspection and certification proposed by the Milk Commission will remove suspicion of collusion as to the quality on the part of the contractor and the officials in charge of the several institutions.

As to system of certification, a form is suggested—both as to the quality of milk submitted and the receptacles. So that if a dealer should deliver to the consumer milk not bearing the seal, the consumer may know that the milk is not from the proper source, and should reject it. The Commission proposes to pay for the services of a veterinary surgeon, a bacteriologist and a chemist. If inspection of the cattle or dairy and premises, or if the chemical or bacteriological examinations of the milk should prove unsatisfactory, the right of the milk dealer or producer to use such seals will, upon notice from the Milk Commission, cease.

Wholesale Poisoning from Eating Ice Cream.

The operatives at Roanoke Rapids, near Welton, N. C., were given an ice cream supper August 17th. Over fifty of the parties who partook of the cream were soon afterwards taken suddenly ill, and one died. The ice cream was made from condensed milk. No report has been made as to the results of the examination of the milk or cream, and no arrests have been made.

On August 18th more than fifty people, the majority of whom were tourists at Colorado Springs and Manitou, Colorado, were poisoned as the result of eating ice cream made by local dealers from a consignment of milk or cream received August 16th from one of the largest creameries and dairies in Colorado, located near Denver. No deaths resulted, although several parties were made critically ill. Analysis by the health officers of Colorado Springs reveals the fact that the cream was charged with formaldehyde to keep it from souring. Arrests have been made.

Wholesale Ptomaine Poisoning from Beef.

The country seat and dairy farm of Senator Wm. M. Stewart, of Nevada, is at Ashburn, near Leesburg, Va. Having decided to sell his dairy stock, consisting of a large herd of some of the finest dairy cattle in America, on August 12th he provided a lunch for the buyers, consisting of coffee, ham and beef sandwiches and other edibles, of which some fifty or more partook. Immediately after lunch a dozen or more of these buyers became suddenly ill, with ab-

dominal cramps and nausea. In a short while all the others were taken down in the same way, all seriously ill at one time. Soon Drs. Detwiler, of Herndon; Weaver, of Sterling; Simpson, of Manassas; Orr, West and Giddings, of Leesburg; Thompson, of Aldie, and Nolen, of Ashburn, were on the scene, and by prompt measures, by 11 P. M., all the patients were out of danger. The beef had been purchased several days before in Leesburg, and had been on ice until the morning of the sale, when it was cooked and served. Examination proved that the illness of the fifty or more was due to ptomaine poisoning in the beef sandwiches. Further examination into the cause of the poisoning is to be held.

The American Electro-Therapeutic Association

Will hold its 13th annual session at Hotel Windsor, Atlantic City, N. J., September 22-24, 1903. The programme is very attractive, both as to the social features and the scientific contributions. We regret that want of space forbids further mention. Dr. Clarence Porter Skinner, New Haven, Conn., is secretary. The titles of 42 papers by as many authors from all parts of the United States are announced—a number from the Southern States.

Small-Pox and Diphtheria.

It is strange that vaccination is so generally neglected at this day as to permit cases of small-pox to exist. We are afraid that "the old family doctor" is becoming historical. In other days he saw to it that his clientele were successfully vaccinated in infancy, and again when the child approached puberty. Then days were appointed for the good family doctor to come by and vaccinate all of the household—the landlord and his lady, the children, the servants, and small-pox was then a thing for tramps only to have. Now, however, every man, woman and child, being "the architect of his own fortune," vaccination is neglected and thought of only when cases of variola are about. Public schools, it is true, require vaccination of pupils on or before admission, but who sees to it that the vaccinations are thoroughly successful? Some cases are reported from various parts of Virginia, as also in other States—in fact, in many. When a disease can be so surely stamped out, health preserved, and lives saved, it is unfortunate that every county, town and city does not compel its citizens to be vaccinated. We are convinced that the chief cause of such neglect is

the pitiful fee or salary allowed the health officials of these counties, towns and cities, in order that they may devote the time essential to see that vaccinations are done.

Diphtheria is again becoming a disease that all of us doctors may look for. It is already more or less prevalent in sections of Virginia. The importance of the early recognition of the disease and the curative as well as preventive value of diphtheria antitoxin treatment have become so well established that counties, towns and cities should promptly provide the means for securing supplies of the antitoxin, etc., for its immediate use on the occurrence of a case of diphtheria. Very generally diphtheria begins among the poor, who have not the means to provide for the treatment. A man of family who was out of employment and had no income last year recently confessed that the death of one of his children then was due to the fact that he was unable to provide the remedy. Charity of neighbors provided for the procuring of antitoxin in time to save the life of other children of the family. Communities may condemn the man for apparent neglect, but it would be more rational to condemn the corporation in which this man lived for not providing for the preservation of the life of his children so long as he was unable himself to make provision to save the life of his child.

University of Louisville, Medical Department.

The advertisement of this time-honored institution was not received in time to receive the notice we give to reputable patron colleges in our second August number. The Medical Department of the University of Louisville has full laboratory equipments; its professors and their assistants are all men who are thoroughly capable and attentive to duties. Its hospital advantages for clinical instruction are ample. It will be noticed from the advertisement that this medical college has two terms of six months each year. One begins September 21, 1903, and ends April 1, 1904, the other begins January 1, 1904, and continues six months, to July 1st, but one year must elapse between matriculation for one term and the matriculation for another. In this respect, the Medical Department of the University of Louisville, Ky., differs from other colleges. The matriculation fee for each term is \$5, while the general ticket fee each term is only \$50 cash. For further information or circular write to the Dean, Dr. J. M. Bodine, Louisville, Ky.

Obituary Record.

Dr. Wm. H. Amiss, Sperryville, Va.,

Died at his home, in Rappahannock county, August 8, 1903, aged 75 years. He was in active practice about fifty years. In the Confederate States army he was surgeon of the Sixtieth Georgia Regiment during the entire war. He is survived by a widow, two brothers (Dr. T. B. Amiss, of Luray, Va., and Prof. W. Edward L. Amiss, of Gaithersburg, Md.) and two sisters (Mrs. Dr. Hollaway and Mrs. Farish, both of Port Royal, Va.). He was not a member of the Medical Society of Virginia.

Dr. George T. Cauthorn, Bedford City, Va.,

Died at his home, August 8, 1903. He lost his eyesight years ago, which caused him to retire from practice and to resign his membership in the Medical Society of Virginia. He served with distinction as an officer in the Confederate army. After the war he located in Bedford City, where he practiced his profession for years. He is survived by a widow and six children.

Dr. Edwin Garrett Hank,

Born in Cambridge, Md., January 27, 1877, died at his home at Tanner's Creek, Va., July 26, 1903. He graduated in medicine from the University College of Medicine, Richmond, Va., 1898, after he had passed the Medical Examining Board of Virginia under its law at that time in 1897. He joined the Medical Society of Virginia 1898, and attended the session that year. He was a man of promise in the profession.

Dr. Francis T. Miles

Died at his home, in Baltimore, Md., July 30, 1903, aged 76. He graduated from the Medical College of South Carolina 1849, served through the civil war as surgeon in the Confederate army, after which he was made professor of anatomy in the Washington University Medical School of Baltimore. In 1880 he became Professor of Physiology in the University of Maryland, which chair he resigned last spring. Few doctors had a wider reputation in the South. He was one of the consulting physicians of the Johns Hopkins Hospital since its foundation, 1899. He held many positions of distinction in the profession.

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Original Communications.

THE SERUM PRECIPITATION TEST FOR THE IDENTIFICATION OF BLOOD STAINS.*

By J. W. MALLET, M. D., Charlottesville, Va.,
Professor of Chemistry, etc., in University of Virginia.

Great interest attaches to the experiments made within the last two years by Uhlenhuth, Dieudonné, Wassermann, Nuttall, Ogier, Herscher and others, showing that if human blood be injected into the body of a living rabbit, the injection being repeated several times at intervals of a few days, and the rabbit thus treated be then bled to death, the serum of its thus "humanized" blood will produce a precipitate on being added to a dilution of human blood serum, but will not do so on addition to the similarly diluted blood serum of one of the lower animals, such as the horse, sheep or dog. It has been shown by Nuttall, whose experiments were extended to the blood of 230 different animals, representing all classes of vertebrates, that the humanized rabbit blood gives the reaction only with the blood of man, or, more feebly, with that of monkeys, and that, out of 18 species of monkeys tested, those most nearly related to man give the reaction most distinctly, though none of them give it as markedly as when human blood is used.

The facts ascertained have evidently a twofold interest.

In the first place, they bring to light the existence of chemical differences in the visibly structureless serum of the blood of different animals. We have been accustomed to think of the differentiation of one animal from another as based upon the peculiarities of anatomical structure, gross or minute, presented by their several organs and tissues, assuming the chemical materials of which these are composed to be limited

in number and substantially the same, for each such material, in the bodies of different animals. Yet from the standpoint of the chemist, it has long been apparent that such materials as the physiologist calls albumin, globulin, myosin, etc., are not entitled to recognition as distinct and severally homogeneous substances in the same sense as are water, common salt, ethyl alcohol or urea. A chemically pure substance is so uniform in character that every mechanically separable part of a mass consisting of it is exactly like every other part, so as to justify the belief that its ultimate molecules are all absolutely alike. But if a mass be made up of molecules of very great complexity, each an aggregate of hundreds of elementary atoms, it becomes practically impossible to detect in the mass minor differences between the molecules, either as to number or arrangement of their constituent atoms. This is precisely the case presented by the proteid materials which play the most important parts in the animal organism, and hence it is impossible, in examining such materials, to say when we have before us a chemically single substance or a mixture—it may be a highly complex mixture—of analogous and generally more or less similar substances or molecules. Anatomical or histological structure depends upon the kind, number and arrangement of the molecules in a mass—chemical structure upon the kind, number and arrangement of the atoms in a molecule. It seems that structure in both these senses must be involved in the identification of an animal species. Nuttall's experiments have shown that the serum precipitation test may not only be used to distinguish human blood from that of the great majority of other vertebrate animals, but that similar results may be obtained in comparing the blood of the lower animals of different families. Thus, if dog's blood be repeatedly injected into a rabbit the serum (or "anti-serum," as Nuttall calls it) of the latter will give a precipitate with

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dog's blood, or that of other species of the *canidæ*, but not with that of animals of other less related families—and, in like manner, the anti-serum for horse blood will only react with the blood of the horse or ass, while the anti-serum for ox-blood will react strongly with the blood of the ox, and more feebly with that of several species of sheep, goat and antelope. In each case an anti-serum reacts with the greatest distinctness with the blood serum of the animal of which the serum has been originally used for injection, reacts less distinctly with the blood serum of nearly related species of animals, and gives no reaction with that of animals of entirely different families. We manifestly have here a generalized fact of great interest for the zoologist and the student of animal physiology in its broadest sense.

But in another direction—that of practical application—the fact in question is valuable. In the field of forensic medicine it has often been desirable to ascertain not only whether particular stains were due to blood, but further, whether the blood was that of man or of one of the lower animals. Hitherto an answer to the latter question could only be based on microscopic study of the morphological character of the corpuscles. These were often available for study only in a more or less altered, and therefore unsatisfactory condition. But even when no such difficulty was present the fact remained as a limitation upon the value of the results that the blood corpuscles of some of the lower animals, including even some domesticated species, or wild species common enough to require to be taken into account, approach in character those of man nearly enough to lead to uncertainty. While the examination of the corpuscles, when possible, will always remain important, we have now in the anti-serum reaction another and more widely applicable means of identification of blood stains with their zoological source, and one less limited in regard to the value of the conclusions reached. Uhlenhuth and Nuttall have shown that the new test may be applied with satisfactory results to dried blood stains, and even to blood which has undergone a considerable amount of putrefactive change. As the only other animals beside man of which the blood serum reacts with the anti-serum for human blood are monkeys, the number of forensic cases involving uncertainty from this similarity will naturally be very few, particularly in countries where monkeys are not indigenous.

Wishing to become practically familiar with

the reaction in question, I have made a number of experiments with it, for the most part a repetition of those already recorded. In two directions I have done a little new work. In the first place, having noticed in all the published accounts of the reaction which I had seen that a rabbit was used as the animal to be injected with human blood in order to obtain the humanized anti-serum, and in view of the fact that rabbits cannot always and everywhere be had for the purpose, I tried to substitute the common fowl, as chickens are practically always available. A chicken of half-grown size has proved in every way convenient and satisfactory. Very recently, and since my own experiments were made, I observe that the same conclusion has been reached by Dr. James Ewing, who has even by means of the chicken anti-serum been able to obtain a precipitate in human blood at a certain degree of dilution, while monkey blood was unaffected (report of a first meeting of the new Society for Experimental Biology and Medicine, New York). Further, I have made a first attempt at the application of the serum reaction as a means of distinguishing the bloods of different races of men—a point of obvious medico-legal value if the results can be depended upon. A chicken received five injections, at intervals of a few days, of blood taken from negroes—it was necessary to have recourse to different individuals—and was then killed by bleeding. The anti-serum of this chicken's blood was then tested, at various degrees of dilution, with samples of negro and Caucasian blood, also variously diluted, the samples being treated side by side and precisely alike. In both cases a precipitate was formed, but there was a clearly perceptible difference: that derived from the negro blood was distinctly more marked in amount, and in the weaker dilutions formed more promptly than that in the sample of blood from the white man.

I have so far made but this single experiment, and somewhat hesitate to present the result to the Society in view of the risk of sensational reporting. Upon so slender a basis it would be rash to assume that a general conclusion of trustworthy character has been reached. But as far as the one experiment goes it is interesting, and seems to render probable the future availability of the reaction for identification of the race source of a human blood stain. If the result now reported should be confirmed by others of like character, a comparative experiment, made under like conditions of dilution, etc., with blood from a white man, blood from a negro, and

blood of unknown origin, would enable an opinion carrying very considerable weight to be expressed as to the source of the last of the three.

It is very desirable that more work be done in this direction, both with negro blood and that of other races, such as the North American Indian, the Chinese, etc. It would also be of manifest interest from the medico-legal point of view to examine the reaction in the case of mulattoes, or others of mixed blood. And there further remain several other lines of research from which profitable results may be hoped. Thus, it having been shown that the prepared anti-serum for human blood may be kept for at least several months before being used, though gradually becoming weaker, it would be well to ascertain with the animal injected how long the living rabbit or chicken retains the "humanized condition" of its blood, so that on killing the animal the anti-serum furnished by its blood will react with the blood of man. It would also be well to examine in detail the most favorable conditions under which, starting with dried blood stains of various ages, strictly comparative tests may be made of such material of unknown, side by side with that of known, zoological origin.

ADDRESS OF PRESIDENT BEFORE THE MEDICAL SOCIETY OF VIRGINIA.*

By J. N. UPSHUR, M. D., Richmond, Va.

In the kind providence of a beneficent Heavenly Father, we are again permitted to assemble in annual session for the consideration of the many important subjects which so vitally concern the dignity and welfare of our profession. You will have laid before you the report of the representatives of this Society of the action of the House of Delegates of the American Medical Association at its recent meeting at New Orleans. You are now brought to the point where you have to decide what action you will take for the reorganization of this Society. What effort shall be made for the organization of the medical profession throughout the State? It is true that for many years this Society has lived and prospered, and many of its oldest members are most reluctant to see it cut loose from any of its old landmarks. And yet the

material interests of the profession, as well as its progress in the future from a scientific standpoint, demand that we should no longer hesitate to follow such a course as will not only increase our numbers to the profession of Virginia, the influence in public affairs, especially those of a professional nature, and the shaping of legislation which shall make us a factor in the body politic to be not only felt, but respected. Up to this time any effort to obtain legislative action in matters of interest and importance to the profession has only met such meagre success as to be almost valueless, has been obtained by compromise, or been an ignominious failure.

In the act of Assembly approved April 23, 1903, section 1747 of the Code, regulating the practice of medicine in Virginia, occurs the clause: "provided, however, that any applicant professing a system of medicine which does not require the use of drugs in the treatment of disease, shall be exempt from standing an examination on *materia medica*." And again: "provided, however, no applicant shall be rejected upon his examination on account of his adherence to any particular school of medicine or system of practice, nor on account of his views as to the method of treatment or care of diseases." In section 1750 of the Code, approved April 24, 1903, it says: "provided, that nothing in this section shall be construed to *apply to or to limit in any manner* the sale or manufacture of proprietary medicines, or apply to or affect or interfere in any way with the *operation of any hospital now established* in this State, or any person while engaged in conducting such hospital, if there be a licensed physician resident and practicing therein, or to any person who commenced the *practice of osteopathy in this State prior to January 1, 1903*." Do not these provisions of the law speak for themselves? Is any comment necessary? Do they not give such latitude in the matter of license as to render every effort of the regular profession to protect the public against charlatanry and quackery ineffectual? Osteopaths placed upon the same professional plane of scientific attainment and professional dignity as members of the regular profession! Though the system is admittedly only nine years old, it claims to cure not only everything which regular medicine cures, but to do it better and to cure what scientific medicine has not been able to cure. Such institutions as the Kellam Cancer Hospital, in Richmond, are recognized and permitted to continue their money getting work, and I am

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told that it is even advertised that this institution received the endorsement and recommendation of the Legislature by this act of Assembly. Is not this humiliation to us as scientific medical men? We would occupy a position of greater dignity and honor without any act regulating the practice of medicine. I believe the medical profession in this State owe it to themselves so to organize and consolidate as to force from the law makers a new medical law, which will remedy all of these evils. I would not disparage the Medical Examining Board. They have done their duty faithfully and efficiently so far as it could be done under the law, but the law has always been defective, and only honest men have been affected, and the quackery, incompetence and fraud at which it has been aimed have escaped.

I know of no better law than to enlarge the prerogative and powers of the State Board of Health, making it the licensing medium under certain provisions and restrictions, as follows—first, to fix a standard of preliminary education before a student shall be admitted to the study of medicine; to fix the duration of study at not less than four years, and the standard of examination for graduation; upon the presentation of a diploma from a college conforming to this standard, to issue a license to practice; failing in this, to require an examination including the prerequisite qualification for the study of medicine. Secondly, the registration of all the physicians in the State upon the presentation of a diploma from a reputable school. This law would be broad enough to cover all cases, and the dealing with quackery more thorough and efficient. Not only so, but the organization of subordinate boards in every county and town in the State, under the direction and control of the State Board, would tend to the promotion of the health of the whole people, and give an accurate record of the vital statistics of the State.

There is urgent need of organization of the medical profession in this State, such organization as will tell for the material advancement and prosperity of the profession. A little less than 70 per cent. of the regular members of the profession of the State are members of this Society. Though only about 30 per cent. of doctors of the State are entirely beyond our control, and not amenable to discipline by this Society, the whole body is judged by the action of one or more of them, and may suffer in reputation and influence in consequence. The battle against

quackery in all of its forms can only be fought successfully by the medical profession of the State presenting a solid front and acting in harmony.

The aspect presented in the Legislature the past two winters of the medical profession endeavoring to procure needed laws, has resulted in ignominious failure or a humiliating compromise, because the pressure brought by the medical men in the State was half-hearted or entirely lacking. The existence of this state of affairs impairs the position and influence of the doctor in the community in which he lives. It is in our power to remedy it.

By the action of the House of Delegates of the American Medical Association, the Code of Ethics has become a constitution, under which each State Society must enact its own laws for the government of the conduct of its own members, and it is under these that he must be tried and disciplined. I am inclined to believe that the organization of the profession in each State as outlined by our National Society, with such modification as local conditions may necessitate, gives promise of the best means of bringing all members of the profession in good standing into affiliation with our State Society, and also establishes a method by which the professional and personal character and conduct of its members may be most accurately and justly estimated. I believe that welded together in this way both individual members of the profession and the body as a whole will be benefited, and the cause of science, where it affects the health and happiness of communities, will be promoted and the doctor occupy a position of influence and dignity such as he has never done before. Besides, it will make us feel more keenly the universal brotherhood of medical men and a greater community of interests of every kind. No men should so consistently endeavor to illustrate in their daily lives that charity which suffers long and is kind in our dealings with each other, remembering ever that to err is human, and strive for that standard of emulation of who can best work and best agree. Let us, my brethren, grow together more closely and prove to the world that if doctors do differ it is only in matters of scientific research and results; that in soul and spirit they are welded together in a noble emulation in the discharge of noble and unselfish deeds, in the exhibition of a sublime moral courage which dares face any self-sacrifice or danger, so that humanity be the gainer. Let our lives before our fellow-men, like the

vibration of the gentle breezes over the chords of an *Æolian* harp, give out music sweet and low; yet when the hurricane blows in its strength and fury, there bursts forth a richer and grander symphony which thrills and entrances. So we, in the common round, the daily duty, may diffuse good cheer and comfort to all with whom we come into contact; when trials and difficulties arise let the imprint of our lives on our fellow-men be grand, elevating, sublime.

It is estimated that the number of physicians in the United States is from 100,000 to 101,000, and of these 77,000 are not members of any medical organization. Then in the membership, alas! too many are apathetic and indifferent. The blame for this does not rest entirely on the individual, but medical societies themselves are not doing their duty. With such conditions, is it any wonder that we see the profession jealous, antagonistic, discordant, disorganized, powerless, without unanimity of thought or action on important questions, ethical, social, or scientific, without influence, socially, politically, or otherwise? A remedy for this is the elevation of the standard of medical education and a more rigid requirement of the educational conditions as a prerequisite to the study of medicine, placing a premium upon high and honorable character of those who aspire to enter the profession. That man should in every sense of the word be a gentleman, and then must come thorough organization by the formation of all good men in every county and town in the State, into local societies, as integral parts of our State Society. Something must be done to awaken many from the state of lethargy and indifference into which they have fallen, and convince them of the vital need, thorough interest, and perfect organization for the protection and advancement of the material interests of the profession.

I have received from the Director of the Census a copy of Circular No. 100, relating to the legislative requirements for registration of vital statistics. This movement has the approval of the Congress of the United States, and a copy of this circular has been sent to the Governor of Virginia, urging that he recommend such legislation as may be necessary in the case to bring about a uniform nomenclature in the registration of vital statistics. I herewith transmit to you this circular, and recommend the appointment of a committee to look carefully into the matter and urge upon the Executive and Legislature such action as to make more efficient

the work of our State Board of Health, and more valuable our national statistics.

I have received a communication in reference to the examination of the eyes of school children, with the request that I should call the attention of this Society to the matter. It is of sufficient importance to merit your careful consideration, and I recommend the appointment of a committee for the consideration of the subject, and to make such recommendations as may seem to be required.

I have been requested also by the officers of the American Congress on Tuberculosis to appoint a commission of fifteen members of this Society to represent it at the International Congress to convene in the city of Washington in April, 1905. No subject can be of more importance to humanity than every effort to stamp out this scourge of the human race, and I hope that this Society will be represented by some of its best men at this Congress. In connection with this subject, and as a most important matter for legislative enactment, is a law for the prevention of marriage by men or women while suffering with infectious or venereal disease. The fact of the increasing number of childless marriages, the early death of many young wives, or life-long suffering and sterility, are serious facts which confront us as physicians. It is said that 70 per cent. of men are sterile as the result of previous gonorrhœal infection to marriage. How horrible the picture of an innocent, pure girl, the victim of the sin of impurity in the man to whom she trusts her very life and soul. How great our responsibility as physicians to guard our patients against such a calamity.

Rarely in the history of this Society have we had a larger record of mortality than during the past year. Conspicuous in this record are the names of L. B. Anderson, Joseph Charles, Lewis Wheat, William Gibson, C. C. Conway, George W. LeCato, H. Grey Latham, and Daniel W. Lassiter. Earnest and true physicians, they have gone to their reward, leaving to us an example of conscientious devotion to duty, and high aims in the pursuit of their profession, which we may well imitate.

By your kind suffrages you have conferred upon me the highest honor in the gift of the Society. Let me assure you of my most profound appreciation. During the past year the welfare of the Society, and how best to advance its interests, has been my most earnest care, and

I can assure you that the privilege of having served you will be among my most cherished memories and a stimulus to increased devotion and loyal service in the years to come.

TREATMENT OF RHEUMATISM.

By A. A. NEFE, M. D., Lookout Mountain, Tenn.,

Lecturer on Sanitary Science, State Medicine and Public Health,
in Chattanooga Medical College, etc.

It is an old saying, and worthy of common acceptance, that "the more remedies we have for an ailment the more difficult is its cure." The very fact of so many remedies having been proposed for a certain disease, shows how hard it has been to find the proper treatment.

Quite likely the one to head the list of such diseases, and the one calling for most patience on the part of both patient and physician, is rheumatism in its varied forms—from the acute, in which the atmosphere turns blue from the language of the sufferer, to the old chronic patient, whose constant presence and complaints cause a similar "blueness," not, however, always originating with the person afflicted. From the "potato" or "buckeye" carried in the pocket as a preventive, the application of poultices and liniments and the administration of the older materia medica, to the present modern treatment is a far cry. But even with the internal use of aspirin, of which I cannot speak too highly, we meet many patients who want "something to rub on."

We know only too well how little good such applications have ever done, and are chary about trying or recommending them. However, my attention having been called to mesotan, which is said to contain 71 per cent. of salicylic acid in such form as to be easily absorbed and not to irritate the skin, I decided to give it a trial. To make the trial conclusive, I tried to eliminate all sources of error, choosing only such cases as I had reason to think would constitute a positive test. That the results are not merely dependent on suggestion can be proven by examination of the urine in which the presence of salicylic acid can be shown by the iron test, even when mesotan applied locally has been the only medication.

In the matter of experimentation, it is fortunate that these patients are clamorous for local applications. Even after having tried many

things they are ever ready for something new, but without that hopefulness that would render suggestive therapeutics of any benefit.

In some cases I have prescribed both aspirin and mesotan; in others, I have alternated their use, and in still others, have limited the treatment to mesotan alone. The local relief has been prompt, and, as yet, I have not found the skin so sensitive in any case as to forbid its use.

The following cases from my note-book will give an idea of my mode of treatment:

CASE I. *General Inflammatory Rheumatism.* Male; aged, 30; well nourished; phlegmatic temperament; temperature, 102° F.; pulse, 110; marked swelling of the elbows and knees; tongue broad, covered with a dirty, white coat; anorexia. He said that the day before, the swelling was all in the wrists and ankles. The pain was so intense that he could not sleep. Treatment was begun with a full dose of sulphate of magnesia to thoroughly unload the bowels. (Right here let me say that I always begin treatment with a saline laxative, as frequently success or failure depends on cleansing the alimentary tract, thus removing toxic material present there, and putting the eliminating organs in proper condition. Without this precaution our best efforts may, and probably will, prove futile.) After the saline I prescribed aspirin, grains 15, every three hours until relief was obtained, then less frequently. Locally, I ordered mesotan $\frac{1}{2}$ ounce, olive oil $\frac{1}{2}$ ounce. M. Sig., apply one teaspoonful, rubbing well into the affected parts, and wrap in flannel bandages; repeat every six hours until relieved. The patient, who had had no sleep for 48 hours, was so much easier after the second dose of aspirin that he slept beyond the time for the next dose. When seen the following day his condition was much improved; the tongue cleaning and the bowels having acted freely. Temperature, 100. No implication of other joints. Treatment continued, the aspirin being given in doses of ten grains. The patient steadily improved, and said I had misrepresented in saying that there was no local application which would do any good, as the mesotan had given him great relief.

CASE II. *Acute Rheumatism.*—Male; white; aged 24 years; swelling and redness of the joints of both hands and wrists. Moderate fever. Mesotan, 50 per cent., was the only medication, and after four days' use a complete cure resulted.

CASE III. *Acute Rheumatism.*—A negro girl

13 years old, living in a shanty with almost no roof, and dark and dirty. The right wrist and knee joints were swollen, hot and tender. Pulse 100; temperature 99.5; tongue broad, showing indentations of teeth, pale, heavily coated with a dirty, white layer; bowels constipated; pain so great that she could not rest day or night. I gave two tablespoonsful of epsom salts in a glass of hot water, to be followed by aspirin, grains 7, every four hours. Locally, one-half teaspoonful of mesotan (50 per cent.) was applied every hour, alternating with aspirin. She slept better, and the next day the joints were not so painful. The treatment was continued, and at the end of three days the joints seemed normal, though some soreness and stiffness still remained. Aspirin was now dropped and mesotan continued twice a day for a week from the first visit, when she was discharged, all pain, swelling and tenderness gone.

CASE IV. *Acute Rheumatism*.—William, laborer, white; aged 27; after working in the rain all day was taken with a hard chill, followed by fever and intense aching of all the joints. Thinking to ward off an attack of rheumatism, he took a stiff dose of quinine and ginger in whiskey, with the hope of being all right the next morning. Instead, however, after a restless and sleepless night, the morning found him with both ankle joints so painful and swollen that he sent for me. His temperature was $102\frac{2}{5}$; pulse, 115; tongue dry and foul; great thirst; bowels inactive. I at once gave sulphate of magnesia, 1 ounce, followed by aspirin, 15 grains, every three hours, until relieved; then every four hours. Locally mesotan (75 per cent.) was applied, being well rubbed into the joints three times a day, covering with oil silk. The next day the temperature was $101\frac{3}{5}$; pulse, 100; tongue moist and cleaning; bowels acting, but no appetite. The condition of the joints was much the same as before. Treatment continued. The next day there was decided improvement; temperature, 100; pulse, 96; tongue clean; appetite returning. He received aspirin, grains 10, every four hours when awake. Mesotan (50 per cent.) was applied twice daily. Progress from now on was steady, and at the end of two weeks the patient was about the house, and soon was able to do light work.

It will be noticed that 15 grain doses of aspirin, every three hours for 30 hours, showed no depressing effect on the heart, although there was some tinnitus. Neither did the 75 per cent. mesotan produce any dermatitis.

CASE V. *Muscular Rheumatism*.—M. J., male, white; aged 45. Indefinite pains in the shoulders and arms. No fever. Comfortable when warm in bed. I prescribed mesotan (50 per cent.), to be applied freely with friction three times a day, using one teaspoonful each time. Relief after three days, with no return up to this time, now two months.

CASE VI. *Muscular Rheumatism*.—Female, white; mother of family; taken with a "crick" in the back, so severe that she could not arise from nor turn over in bed. As she was evidently uræmic, I gave her 10 grain doses of aspirin every three hours. Mesotan (50 per cent.) was applied to affected region with as much massage as she could bear. In three days she was free from pain sufficiently to sit up, and a few days later she said she had fully recovered. She told me that some of her previous attacks had lasted as long as two weeks.

In muscular rheumatism mesotan has given me good results, and also in sub-acute articular rheumatism, in which I have used it without any other treatment whatever, in order to make a thorough trial of the remedy. In the chronic forms and in those cases in which a deformity similar to, if not identical with, arthritis deformans in its early stages exists, I get good results by having the parts bathed in water as hot as can well be borne, wiping dry and rubbing in mesotan 50 per cent. When I say "good results," I do not mean that the joints regain all their suppleness, for they do not, but the pain and stiffness are relieved to a considerable extent, and any relief we can extend to such poor sufferers is a great blessing to them as well as their friends.

I believe that in mesotan we have a good auxiliary to aspirin, and in many cases it is sufficient for the relief of the trouble without any other medication. It is especially useful in cases complicated with gastric or cardiac irritability, in which any medication internally is ill borne. Its clean and clear look appeals to fastidious patients, as does the absence of staining. With brisk massage it readily penetrates the skin, and within a short time the chloride of iron test shows the presence of salicylic acid in the urine. By means of aspirin and mesotan we can feel fully equipped to treat cases of rheumatic troubles, and need not tell patients that the best cure is "six weeks," as was taught a quarter of a century ago.

Before closing, allow me to refer once again to the need of ridding the system of all effete

matter, and thus enabling the various emunctories to carry away all toxic material. Eternal vigilance is the price of therapeutic success, and on it depends the result of treatment. It would be unfair to condemn a remedy as worthless unless the system was in proper condition for it to manifest its action. My cases have been drawn from a general practice, such as we physicians all have, who are not blessed with hospital advantages, and as many of the cases were among those who have neither comforts nor even necessities, I think the results show very favorably.

To sum up my treatment—first, thorough cleansing of the alimentary tract with salines (or calomel, if indicated); second, internal administration of aspirin p. r. n., and locally mesotan (50 per cent.) in oil, applied with friction, and covered with a flannel or oil silk. Under the above treatment our cases will recover more promptly and with less suffering than under any other I have tried in an experience of over twenty-five years.

METHODS TO HASTEN EPIDERMIZATION, WITH SPECIAL REFERENCE TO SKIN GRAFTING.*

By STUART MCGUIRE, M. D., Richmond, Va.,

Professor of Principles of Surgery and Clinical Surgery, University College of Medicine; Surgeon in Charge St. Luke's Hospital; Visiting Surgeon Virginia Hospital; Consulting Surgeon Home for Incurables, etc.

Every practitioner is frequently called on to treat loss of cutaneous surface due either to injury or disease. If the area is small repair is usually rapid and complete, but if it is large repair often progresses to a certain point, and then ceases. In the one case the capacity of the germinal cells is sufficient to meet the demand made on them; in the other the amount of material required is more than they can produce.

It is the object of this paper to discuss methods to hasten healing in cases where the process is slow or at a stand still. No effort will be made to review the literature of the subject, and only the results of practical experience will be given.

To secure epidermization the first step should be to stop suppuration. The second should be

to stimulate normal regeneration and to protect the embryonal cells resulting. The third, in case the first two are insufficient, should be to augment nature's reparative forces by grafting the bare area with epithelial tissue of sufficient vitality not only to live, but to grow.

These three indications for treatment must be followed in the management of every granulating wound, whether it be a small ulcer or an extensive burn. They cannot be carried out independently, but must be combined. They will not be discussed separately, but collectively under the different dressings commonly employed.

Moist Dressings.—After the preliminary cleaning of the wound and adjacent surfaces, the first treatment usually tried is the moist dressing, the character varying from the cold water dressing of our forefathers to the moist corrosive sublimate dressing of the antiseptic extremist of the present day. The method of application consists in saturating a pad of absorbent cotton with the fluid selected, applying it to the raw surface, and preventing rapid evaporation by covering it with a layer of oil silk. The cotton should be wet as often as it becomes dry, and should be changed as often as it becomes soiled. The solution employed should not be a strong antiseptic, as it would kill cells as well as germs, but it should have an inhibitory action on microbic life. The three that will be found most satisfactory are *chloral hydrate solution* (chloral hydrate 3i, water 0ij); *Thiersch's solution* (salicylic acid 3ss, boric acid 3iij, water 0ij); and *acetate of aluminum solution* (alum 3vj, acetate lead 3ixss, water 0ij). They may be used either hot or cold, and should be employed in conjunction with rest and elevation. I have had many a swollen and rebellious leg ulcer come to me, scarred with caustics, gritty with antiseptic powders or filthy with greasy ointments, but not one that did not yield readily when the patient was put to bed, the limb elevated, and the part treated with hot chloral dressings.

Dry Dressings.—The treatment of granulating surfaces by dusting them with antiseptic powders has been made undeservedly popular by the advertisements of firms that had proprietary preparations to sell. The powders most frequently employed are iodoform, aristol, dermatol, bismuth, boric acid and oxide of zinc. In some cases they do good, but in most instances they do harm. Chemically they destroy germs and lessen suppuration; mechani-

*Read at the meeting of the Medical Society of Virginia held in Roanoke, September 15-17, 1903.

cally they destroy embryonal cells and retard healing. When first applied to a wound decided improvement is seen, but continued use is followed by irritation due to absorption of serum and the formation of crystalline concretions that act as foreign bodies, or broad incrustations that prevent the escape of pus or other wound secretions. I am free to say that I do not use dusting powders. There has not been a grain of iodoform in my private hospital for the last three years, and its banishment has not proved detrimental to patients, but exceedingly beneficial to the atmosphere of the institution.

Oleaginous Dressings.—The use of salves and ointments in the treatment of superficial wounds has fallen into unmerited disfavor. Because, before the day of antiseptic surgery, they were abused is no reason why they should now no longer be used. Some preparations quickly become rancid and should be avoided; others remain sterile indefinitely, and may safely be employed. Vaseline, lanoline and castor oil, plain or medicated, will give better results in some cases than any other application. They exert a feeble antiseptic action, thus lessening suppuration; they exclude the air, thus relieving pain; and they prevent the adhesion of overlying dressings, thus saving the embryonal cells from mechanical injury. In extensive burns I have found nothing better in the early stages than a 5 per cent. mixture of ichthyol and vaseline, and in sluggish granulations, especially of a tuberculous character, I have never failed to see good to come from the application of a combination of 1 per cent. carbolic acid, 5 per cent. Balsam Peru, and 94 per cent. castor oil.

Nutritive Dressings.—Considerable benefit will sometimes be derived in the treatment of a granulating wound by the use of a dressing that supplies food directly to the germinal cells and their offspring. Proliferation is often arrested by starvation, and feeding is the logical remedy. The agent employed should be aseptic, non-irritating, and should contain nutritive material in an easily absorbable form. The preparation that in my opinion most nearly meets these requirements is Valentine's Meat Juice. It is sterile, contains no alcohol, is rich in food stuff, and has practically the same percentage of sodium chloride as the normal serum of the blood. It should be diluted with three-fourths water, warmed to the temperature of the body, and applied on cotton in the form of a moist dressing. My experience has been that it does a great deal

of good for a short while, but then loses its effect. As soon as pale granulations become pink and healthy it has fulfilled its function, and should give place to some other dressing.

Alterative Dressings.—Cells, like individuals, sometimes without assignable reason, develop disturbances of nutrition requiring alterative treatment. In the management of a granulating wound there is often call for local medication. Experience alone can teach the surgeon the agent to employ and the time and method of its application. Nitrate of silver, mercurial ointment, chloride of zinc and sulphate of copper are all useful and time-honored remedies. Among newer preparations must be mentioned proto-nuclein. I have several times seen indolent or foul granulating areas that had defied a half dozen other lines of treatment improve under its use as if by magic.

Protective Dressings.—In direct contrast to granulating surfaces that need stimulating or alterative treatment are those that are doing well, and only require protection. When the wound is healthy and healing progressing satisfactorily, nothing is more mischievous than meddling interference. All that should be done is to prevent infection by cleanliness, and to avoid injury to the newly formed cells by mechanical protection. Cleanliness is secured by changing the dressings as frequently as they become soiled and bathing the wound with normal salt solution. Protection is best accomplished by interposing some impervious material between the granulations and the meshes of the overlying gauze, into which they would otherwise become entangled. In my experience the best results follow the use of strips of rubber dam, collodion film, or cargile membrane placed lattice-wise so as to afford drainage. Rubber dam is the material used by dentists, and can be sterilized by boiling. Collodion film can be prepared by pouring collodion on an aseptic sheet of glass, allowing it to harden and then cutting it in strips. Cargile membrane is made from the peritoneum of an ox, and can be bought on the market in germ proof envelopes.

Proliferating Dressings.—When the destruction of skin is so extensive that the normal reparative power is insufficient to cover the granulating area with epithelial cells, recourse must be made to skin grafting. It has long been known that bits of cuticle properly planted on fresh wounds or healthy granulating surfaces would become adherent and grow, thus protect-

ing underlying structures and acting as independent foci of epidermization for adjacent tissue. The application of this fact with epithelial cells secured from different sources and applied by various methods has enabled the surgeon to heal wounds quickly and certainly, which otherwise would be slow to close, or perhaps become permanent ulcers.

Skin grafting, when practiced on newly made wounds is called primary grafting. When practiced on granulating surfaces it is called secondary grafting. If the surface be a fresh one, care must be taken to perfectly arrest hemorrhage before applying the grafts, otherwise bleeding will detach them. If the surface be an old one, care must be taken to stop suppuration before applying the grafts; otherwise pus germs will devitalize them.

Skin grafts may be obtained from the patient, and then are called autografts; they may be cut from another person, and then they are called heterografts; or they may be secured from an animal, and then are called zoografts.

There are three recognized methods of skin grafting. Reverdini's, consisting in cutting small particles from the superficial layers of the skin with scissors and planting them at intervals over the surface to be covered. Thiersch's, consisting in cutting broad strips from the superficial layers of the skin with a razor and placing them so as to completely cover the wound area; and Wolfe's, consisting in the dissection of a piece of skin the entire thickness of the structure and fitting it to the defect to be remedied.

The dressing after any of the above methods consists of a lattice work of protective strips over which is placed a pad of gauze wet with normal salt solution. This should be removed and replaced at the end of the third day, and the subsequent management of the case carried out on general surgical principles.

The instruments required for skin grafting are so few, the operation itself so simple, and the results secured so immediate and satisfactory, that the surgeon who does not avail himself of it in suitable cases does an injustice both to himself and his patient.

Primary skin grafting should be employed after the removal of an epithelioma or other superficial growth, provided infection can be prevented, hemorrhage arrested, and ligatures and sutures avoided. The depression due to the removal of tissue will fill up beneath the grafts and the deformity will be less than antici-

pated. I have removed a growth the size of a silver dollar from a nose, grafted it at once with skin from the arm, and discharged the patient with a perfectly healed wound in ten days from the operation.

Secondary skin grafting should be employed when ligatures are used to arrest bleeding, or sutures to secure partial coaptation; where infection is likely or already exists, or where the excavation is deep and a large amount of granulation tissue is necessary to fill it. In operating for cancer of the breast, where approximation of the margins of the wound is secondary to extirpation of the diseased tissue, I remove the malignant growth as completely as possible, bring the cut edges of the skin together as nearly as practicable, apply a protective dressing, and a week or ten days later remove the stitches and skin graft the granulating area.

Reverdini's method should be employed where the area to be covered is small, and where the administration of a general anesthetic is contraindicated. The surface to be grafted and the site from which the grafts are to be taken should both be prepared. The skin is then elevated into a cone by means of a sharp tenaculum and a small piece snipped from its superficial layer by means of a pair of curved scissors. The fragment is at once transferred to the area to be grafted and carefully seated on the granulations, care being taken to prevent the edges curling inward, thus preventing apposition of raw surfaces. This is repeated until a sufficient number of grafts have been planted to thickly stud the bare area. The operation of cutting the grafts can be made painless by the use of the chloride of ethyl spray. I have found the above method very satisfactory, especially in weak, nervous patients, where a more formidable operation would have a bad effect. The space between the grafts is rapidly covered and the resulting scar is good.

Thiersch's method should be used when the surface to be covered is large, and when the patient is either under an anesthetic or its administration will be compensated for by the more rapid recovery it promises. The grafts are obtained by making the skin tense and flat, either manually or by special hooks, and cutting off the superficial layers by a to and fro sawing motion of a sharp razor. The larger the size of the grafts the better. Usually they are an inch wide and four or five inches in length. Care should be taken to remove only the upper layer

of the skin, otherwise the wound inflicted may prove as difficult to cure as the wound the surgeon is endeavoring to remedy. As the grafts are cut they are dropped into a basin of warm saline solution. Afterwards they are carefully placed on the area to be grafted, the edge of one graft overlapping that of the adjacent one. Thiersch's method of skin grafting is the one most frequently practiced, and the one that gives the most brilliant results. The objections to it are that it necessitates the use of an anesthetic and the site from which the grafts are cut is painful and takes some days to heal.

Wolfe's method should only be employed in exceptional cases. The surface of the area to be grafted should be thoroughly revived and the margins made fresh and vertical. All bleeding should be completely arrested. The new skin to be used as a graft must be dissected from some other site. The entire thickness of the skin should be removed, but no subcutaneous fat taken with it. The outline of the incision should preferably be an ellipse to permit of closure of the defect by sutures. The skin removed should be one-third larger than the defect to be covered to allow for shrinkage. The graft after having been placed in its new position may be retained by sutures or reliance placed on overlying dressings. The method is uncertain in results, but may sometimes be used with advantage. I remember one case where I planted a single piece of skin, having an area of some 16 square inches. The graft was obtained in retrenching the scrotum of a man for varicocele, and was planted on a woman who had been operated on some days previously for cancer.

In addition to the recognized methods of skin grafting just described, occasional reference will be found to grafting wounds with the skin of an egg, with the pellicle of a blister, and with dry epidermal scales, such as scrapings from callosities or dandruff from the head. I have tried all these expedients with unsatisfactory results. The only reasonable sources from which to obtain vital epithelial tissues are the skin of the patient, autografts; the skin of another individual, heterografts; and the skin of a lower animal, zoografts.

Autografts are usually cut from the patient's thigh or shoulder. They furnish the material most likely to prove successful, and should be employed except in cases where the patient's general condition is bad or where the area to be grafted is very extensive. The practice, how-

ever, is not free from annoyance or distressing complications. A woman came to me not long ago with an epithelioma of long standing on the vertex of her head. It originated in an old scar and was about four inches in diameter. I shaved her head, made an incision around the growth, and scalped her. The wound was treated with a moist antiseptic dressing until it had filled with healthy granulations to the level of the margins. I then skin grafted the bare surface by Thiersch's method, cutting the grafts from the deltoid region. The grafts took beautifully, and in two weeks she was apparently well. Several months later she came back to the hospital. Her head looked like a tonsured monk, and the skin on the bald area was perfect, but the shoulder from which the grafts had been cut gave her much pain. On examination it was found to be the seat of a keloid growth the size of a man's hand. I had cured her of cancer only to give her keloids.

Heterografts are obtained from another individual, from amputated extremities or from fresh cadavers. They usually grow well, and should be employed when they can be secured from a satisfactory source. They entail the danger of infecting the patient with syphilis, tuberculosis, and other diseases, which must be carefully guarded against. The question of the necessity of the grafts being the same color as the skin of the patient on which they are planted is still unsettled. It is claimed that a negro skin grafted on a white person will lose its pigment, and that white skin grafted on a negro will become pigmented. A few years ago I had an opportunity to test the question. A negro man as black as the ace of spades had his leg crushed. It was amputated, but the flaps sloughed, leaving a granulating area three or four inches in diameter. It was determined to skin graft it, and my assistants were directed to prepare the man for the operation at the next clinic. When the patient was brought into the amphitheatre I had just finished amputating the leg of a white man. On the spur of the moment I decided to cut the grafts from the white leg and plant them on the black one. The operation was done by Thiersch's method with satisfactory results, the patient being discharged as cured in three weeks' time. Two years afterwards the man came back to the clinic on account of some other trouble. An examination of the grafted stump showed that the grafts were as white as they were on the day they were

planted. While one case proves little, the result is significant. It has for obvious reasons deterred me from reversing the experiment and grafting a negro's skin on a white patient.

Zoografts are obtained from one of the lower animals, the frog, chicken, pig, dog, cat, rabbit or guinea pig, being most commonly used. They do not grow as readily as grafts from the skin of a human being, and they should not be employed when other sources of supply are available. Still there are certain conditions where they are not only useful, but are the only means by which a patient can be cured.

A small negro child was brought to the clinic last winter, who had been severely scalded several months before. Some healing had occurred at the margins of the burns, but effort at repair had ceased, and there was a granulating surface on the body covering an area of over one hundred square inches. The child was treated until the granulations were healthy, and then came the question of where to get the skin with which to graft it. The child was too small and its condition too feeble to furnish the grafts from its own person. The mother, relations and friends all declined to make the necessary sacrifice. No jail bird would volunteer as a victim even at the promise of liberty, and applications to all the hospitals in the city seemed to show that for the time at least surgeons had stopped amputating limbs. As a last resort, recourse was made to zoografts. A healthy six weeks' pig of chocolate color was purchased. It was carefully shaved and given frequent scrubblings and antiseptic baths. The day before the operation the belly was prepared as if for abdominal section. The grafting was done before the class of the University College of Medicine. The pig was brought in on one table, the pickaninny on another. Grafts were cut from the belly of the pig and planted on the back of the child. The usual dressings were applied, and for two weeks everything went well, and it was thought the operation had been completely successful. The wound itched, however, and one night the child got its hands beneath the dressing and scratched off a large portion of the new and tender skin. While the result was a partial failure, enough of grafts remained to demonstrate the fact that pig skin would grow. More recently I have had other cases that were perfectly cured by this method.

Dr. William Flegenheimer, a graduate of the Medical College of Virginia, and formerly resi-

dent physician to the City Hospital, reports in *The Virginia Medical Semi-Monthly* (issue of June 26, 1903), a case of successful pig skin grafting in which an extensive defect in the cutaneous surface of a man was restored by grafting with the entire thickness of the pig skin. He states that "at the present time the wound is completely healed, and strange as it may appear, it has a nice growth of fine hair upon it." This is the only case to my knowledge where pig skin grafting has been done by Wolfe's method, and it will be interesting to watch the development. In grafting by Reverdini's or Thiersch's method the hair foccicles are, of course, not transplanted.

Dr. J. Hamilton Browning, of the University of Virginia, in a personal letter dated February 5, 1903, has reported another interesting and successful case of pig skin grafting. The case was one of railway injury of the thigh, resulting in the loss of 225 square inches of cutaneous surface. The grafting was done in three stages, with a week's interval between each, one-third of the wound being covered at a time. During healing there was infection of the wound with the bacillus pyocyaneus, causing so much exfoliation that it was feared the operation had proved a failure. The surface remained covered, however, with a thin white film that looked like coagulated albumen, and microscopic examination of this film proved it to be epithelial tissue. The wound ultimately completely healed, and the result was all that could be desired. Dr. Browning concludes his letter as follows: "I had pig prepared just like I do a patient for an abdominal operation. I always selected a sow pig, as they are easier to keep clean." Whether the last statement is based on fact or on prejudice I leave my country friends to discuss.

New Orleans Polyclinic.—Seventeenth annual session opens November 2, 1903, and closes May 28, 1904. Physicians will find the Polyclinic an excellent means for posting themselves upon modern progress in all branches of medicine and surgery. The specialties are fully taught, including laboratory work. For further information, address, New Orleans Polyclinic, Post-office Box 797, New Orleans, La.

CHYLURIA.*

By M. D. HOGE, Jr., M. D., Richmond, Va.,

Professor of Pathology and Urology, University College of Medicine.

Chyluria, a rather rare disease, is characterized by a whitish, milky looking appearance of the urine, due to the admixture of chyle. The color and consistency are produced by the presence of the products of digestion as chyle, fat, albumin and fibrin. It sometimes has a reddish or pink color when there is more or less blood. Soon after the urine is passed, it coagulates firmly, having the appearance of blanc mange. Sometimes the clotting takes place within the bladder, or kidneys more rarely; then there are symptoms of cystic or renal colic. The quantity of urine is considerably increased; the specific gravity generally low and the reaction alkaline. The amount of fat varies from a trace to as much as two per cent., depending largely upon whether it contains chyle or lymph.

As to the causes, it is stated that the *filaria sanguinis hominis* is always found in the blood of patients suffering from chyluria, in tropical countries. The parasite is most active at night, remaining dormant during the day and working hours. The *filaria* is found in the blood and urine, but the eggs always in the latter.

Cystic tracts and communications have been discovered post-mortem, connecting either the chylous or lymphatic vessels with the ureters or bladder. Here the chyluria was more or less intermittent, depending upon the position of the body. Another and important cause of this disease, and one on which little stress has been laid, is bad and improper food.

The symptoms, aside from the urine, are irregular and indefinite. While chyluria may be intermittent, lasting a few weeks, or, at times, lasting for months, still in the main the general health suffers, there being debility, depression, weakness and general emaciation. The disease may persist for fifty years.

Mr. J., aged 37; of fine physique and weighing 218 pounds, recently consulted me on account of the unusual appearance of his urine. He noted that soon after it was passed it became semi-solid, or gelatinous, and milky in color. On examination, it was found to have a specific gravity of 1002; the quantity passed in 24 hours two pints; reaction, alkaline; urea, four grains to the ounce; albumin, 10 per cent.; chlorides,

a trace; phosphates, 16 per cent. If heated in a test tube or beaker, it became perfectly fluid; and if shaken up with ether, the fat collected and floated on top.

Under the microscope, the only elements found were a few squamous bladder cells, leucocytes, and the fat in an emulsified and fine state of molecular division. There were no distinct droplets of fat. If heated and agitated with bichloride of mercury, it gave a red or crimson reaction, forming red oxide of mercury, which soon separated into two layers—a thin, watery, white layer on top and a red granular deposit at the bottom. Treated with salicylic acid (as a preservative), on cooling, it soon regained its gelatinous form, resembling blanc mange.

The patient has been in splendid health all his life, but a heavy eater and a constant drinker. While not eating much meat, he eats an enormous quantity of butter on all his food, which leads me to believe that the cause of his chyluria is improper diet. The blood, through the lacteals, is surcharged with an excessive emulsion of fat, which, not being properly oxidized by exercise, is taken up by the epithelium lining the convoluted tubules of the kidney along with the other solids from the blood. In this case, the urine and blood were carefully examined for *filaria*, but without result.

The treatment by drugs is altogether empirical. Large doses of gallic and tannic acids have been used with apparent benefit. Thymol, for its germicidal action, has been recommended by some. In my case, the absolute cutting out of butter (fats) and whiskey has had the result of completely relieving the patient so far.

308 East Grace Street.

PRESENT STATUS OF SERUM- AND ORGANO-THERAPY.*

By J. McKEE SITES, M. D., Martinsburg, W. Va.

For centuries past there have at intervals appeared to the minds of scientific men glimmering rays of light, presaging the dawn of a new day, when the bright scientific light would penetrate into the dark, mysterious and hidden secrets of nature, bringing to view wonderful prophylactic and curative use of serums obtain-

* Read before the Richmond Academy of Medicine and Surgery, September 8, 1903.

* Read before the West Virginia State Medical Society during its annual session, 1903, at Charleston.

ed from artificially immunized animals, and the therapy of organic extracts. In ancient general and historical literature we find that the ancients had hold of facts bearing upon therapy, which we at this enlightened age do not yet understand, and to principles in medical science which are only now being worked out. They believed it possible to render a person proof against all forms of poisons by the constant and daily use of small doses of the various poisonous principles. Snake bites were treated by the blood of animals that had been fed on poisonous adders. Knowing that geese took adders as an important article of their diet, and were not affected by their bite, they reasoned that their blood must contain an antidote or material which would counteract the venom, so that the blood from geese was used as a panacea for snake bites.

Hydrophobia was sometimes treated by administering the blood and cooked liver of the dog that had done the biting.

Step by step, and little by little, serum and organo-therapy have been brought down, until within the memory of the present generation, have been announced the discoveries of Pasteur and Toussaint of their curative serum for anthrax, Behring's anti-diphtheritic serum, and still later of Mormorek's, Calmette's, Yersins', Haffkine's, Kitasato's, Chantemesse's, Panes', and numerous other serums.

There still seems to be a difference of opinion among scientific men as to whether there is an actual tissue change, or leucocytic activity, as the means by which antitoxin causes a destruction of the toxins, by producing neutralizing substances in the parenchyma of the cells, or whether, as a great many English and German students claim, the influence of the antitoxin upon the toxin is simply a chemical one, while the tissues and cells remain passive.

From present indications, and the latest experiments in the field of animal research, there seems to be but little doubt that there is a conjoined action of leucocytic and chemical forces.

The field of serum and organo-therapy is enormous and ever widening, and as yet crowded with uncertainties and difficulties, which can only be cleared up by time and patient research.

Anti-Diphtheria Serum.—It would seem a waste of time to state that there are still those who oppose diphtheria antitoxin, and condemn it as dangerous and useless, but such is the case, and we need not wonder when we consider that

there are persons in this enlightened age who still believe that the "earth am flat and the sun do move." They have trouble to keep up with the procession, and scientific facts and wonders come to them slowly. A remedy which has reduced the frightful mortality of diphtheria 40 or 50 per cent. down to 10 or even 5 per cent. needs no commendation. Recent statistics from all sources carry convincing evidence of the great value of anti-diphtheritic serum.

The American Pediatric Society reported, through its committee in 1900, a summary of nearly 6,000 cases from the practice of 615 observers, and two city boards of health, with a mortality of only 9 per cent.

In the Journal of the American Medical Association, April 19, 1902, some very interesting and instructive figures are quoted from the municipality of Mulhausen, Germany, showing the great fall in the mortality rate from diphtheria after the introduction of antitoxin.

In some of the hospitals of the large cities in this country preventive or immunizing injections are given to every child admitted, so that by this means diphtheria, as an epidemic disease, has been almost stamped out of these hospitals.

There seems to be very little danger from well prepared and fresh antitoxin, and the tendency is to give it in larger doses. Recently anti-diphtheritic serum has been used in the treatment of other diseases than diphtheria.

O'Malley, of Philadelphia, reported in *American Medicine*, January 17, 1903, the use of antitoxin in broncho-pneumonia, complicating the exanthems, with excellent results. He believes we have in it a most valuable therapeutic agent for the large class of cases, otherwise beyond therapeutic aid, as in broncho-pneumonias, which so often cause fatal complications in the bacterial diseases of childhood, such as scarlet fever, whooping cough, measles and influenza.

Anti-Typhoid Serum.—Until a very recent date, the development of an anti-typhoid serum has been extremely disappointing, and at present we seem to be only on the threshold of knowledge which may develop an active prophylactic in the form of immune horse serum, and sterile cultures of the bacillus, and we may hope for a positive curative serum.

The trouble has been that in the treatment of typhoid the serum to effect a cure must be both an antitoxin and a bactericide.

Bokenham and Chantemesse have recently

succeeded in immunizing horses with typhoid cultures, and obtained a serum that would save guinea pigs and other susceptible animals from typhoid infection, even after the disease was already developing.

Chantemesse reports 100 severe hospital cases of typhoid treated with serum, and of these all that were treated before the tenth day recovered, and all the others, except six; two of the latter did not get the treatment until the twenty-first day; one died of pneumonia, and one of pre-existing extensive gangrenous sloughing. If the disease is seen during the first week Chantemesse recommends the use of only 6 to 8 c. c.; if longer standing, 10 to 12 c. c., as the usual dose for adults.

E. A. Walker agrees with Chantemesse's statement that a serum to be curative must be a bactericidal as well as an antitoxic serum. His conclusions, based on laboratory and clinical studies, are as follows: (1) That a serum with anti-microbial and antitoxic power can be obtained by immunizing horses against the bacillus typhosus; (2) that a high degree of immunization must be obtained, and the employment of living cultures in the later stages is desirable; (3) the serum must be made widely polyvalent by use of as many and widely different races of the bacillus typhosus as possible; (4) the relative value of the serum may be determined by its relative agglutinating power. With reference to the preventive inoculations with sterilized cultures, it may be stated that extensive experimentation has shown it to be of decided value.

Anti-Tetanus Serum.—In reviewing the statistics of cases treated with tetanus antitoxin for the past few months, we do not find anything very favorable or encouraging. Numerous investigators, from every quarter of the scientific world, have reported cases treated with various results.

In the United States, Germany, Austria and France the percentage mortality from the treatment varies from 40 to 65 per cent., counting all cases, or 70 to 80 per cent., counting acute cases. The mortality rate is far less in sub-acute and chronic than in acute cases.

The serum deteriorates rapidly, and there is unquestionably a decided difference in the potency of the tetanus toxin used in the immunization of animals, and there are many other uncertainties and difficulties yet to be overcome before tetanus antitoxin can be called a specific.

The great majority of cases have been treated by the subcutaneous method, but some prefer and think they get better results by making the injection either intracerebral or subarachnoid. Loeper and Oppenheim have suggested intravenous injection as probably more efficacious than any of the other methods.

Anti-Pneumococcic Serum.—With regard to the value of the sero-therapy of pneumonia, we have nothing positive, or indeed very promising, and, in fact, in this country experience has often been against it. A few investigators claim good results from large and frequent doses, and it may not be too much to hope that in the not distant future some one may find a serum which will cure this rebellious and fatal malady.

Anti-Streptococcus Serum.—After much earnest work and experimentation by able men, they have come to the conclusion that the use of anti-streptococcus serum is much more limited than at first supposed. We now know that when streptococcus infection is found in combination with those of other micro-organisms, the serum has no effect, except in so far as it controls streptococcus symptomatology.

When we are able to obtain a polyvalent serum, then it will be unquestionably that we will have opened the door to new accomplishments in the line of serum therapy.

Favel emphasizes the anti-bacterial power of the serum, and reports 76 cases of erysipelas, pneumonia, streptomycosis in tuberculosis, perityphilitic abscess, meningitis, local streptococcus infection, etc., where he obtained positive improvement or recovery. The serum must be fresh, as it deteriorates rapidly, and is not fit for use after a month.

Professor Adolph Baginsky, of Berlin, has recently reported remarkable results from the use of the Aronson anti-streptococcus serum in scarlet fever. He claims that scarlet fever, like erysipelas, is caused by the streptococcus. Of the 70 cases treated, the mortality was 8 per cent.

Anti-Plague Serum.—Haffkine's preventive inoculations, with vaccine, that reduced the percentage of cases to one-twentieth the number that occurred in the uninoculated, was soon followed by Yersins' announcement that he had produced a curative serum.

In 1900 Calmette stated that the plague bacilli multiply first in the lymph channels, but in a few hours are in the blood and the organs, and insisted on the value of intra-venous injection.

tions. The phagocytosis stimulated at once by the serum causes the destruction of the bacilli, in this way having two distinct actions, curative and prophylactic. As a curative dose he gave 20 c. c., and as a preventive 10 c. c.

Taking the statistics from all sources, the reports are very encouraging, but the extent of the value of anti-plague serum is still an unsettled question. Future study and research may develop a serum with greater curative powers than any now in use.

Anti-Tubercle Serum.—Clinical and experimental evidence appears to point to the fact that in the serum treatment we may have an adjunct in the control of tuberculosis, which, when given in the very early stage, may result in cure, or, at least, retard the progress. As a means of diagnosis tuberculin is being used daily, with satisfactory results.

Anti-Venene.—Calmette secured a snake venom antitoxin, which has been shown, by several observers, to possess a very powerful action against cobra poisoning, and a less active influence against other venoms. This statement is borne out by laboratory and clinical tests.

Whatever the form of venom, 20 to 40 c. c. of the anti-venene should be used at once after the bite, and repeatedly.

Dyer, in 1897, and Woodson, again in 1899, have used Calmette's anti-venene in cases of leprosy, and report remarkable results, and even cures, where all other treatment had failed.

Experimentations are being made with many other serums or antitoxins, in attempts at the cultivation of immune serums, but we have nothing certain or positive to report from any of them.

Pfeiffer's anti-cholera serum has not met with the enthusiastic success clinically that was hoped for. As a prophylactic it has been of undoubted value, but as a curative measure it has failed.

Sanarelli's serum for yellow fever depends upon the identity of the bacillus icteroides with the cause of yellow fever, and has proved of little clinical value, as might be expected, when we remember that recent investigations seem to show that Sanarelli's bacillus is identical with the bacillus of hog cholera.

The fact has been mentioned that the bacillus icteroides neither agglutinates with any regularity with serum from yellow fever patients, nor does their serum protect guinea pigs inoculated with the bacillus icteroides, so that if this be true we have not far to go to understand the

failure of its immune serum to act against the toxin of yellow fever.

Liscia and Mancini have recently reported some cases of anthrax infection saved by the use of Sclava's anti-anthrax serum.

Carasquilla has produced an immune serum which he has employed in the treatment of leprosy. W. A. Lee has reported that he has been especially successful with it in malignant cases with fresh eruptions.

Tests and experiments are being made with serum for glanders, erysipelas, whooping-cough, syphilis, malaria, etc., with as yet no definite results.

Coley's tumor serum, for sarcoma, is still receiving attention, and Trunczek's artificial inorganic serum for arterio-sclerosis, has been very favorably commented upon by Levi and others.

The outlook of serum therapy, the newest therapeutic science, is very encouraging, and opens up a broad field for profitable research.

Organo-Therapy.—After carefully reviewing the literature on organo-therapy, we are forced to the conclusion that, with the exception of the thyroid and suprarenal glands, this branch of therapeutics has hardly kept pace with its kindred, serum therapy.

The extract of thyroid gland has easily held its place as a remedy in the treatment of myxedema, cretinism, hemophilia, scleroderma, obesity and fibroid tumors.

Investigators declare that the gland hastens tissue waste in proteid portions of the body, or that there is an increased rapidity of combustion throughout the body, and thus with the increased flow of urine which follows its use, decrease the bodily weight.

A very important effect of the gland is to quicken cell activity. The life history of a cell is soon carried to its completion, and it is in this way, in all probability, that diseases like myxedema and cretinism are benefited by its use.

Knowing so little of the true pathology, and absolutely nothing of the etiology of some of these diseases, and not having a very exact knowledge of the physiologic function and therapeutic action of animal secretions and extracts, we cannot yet clearly understand the rationale of the cure brought about by the thyroid gland and allied structures.

Prof. Eugene Fuller, of the New York Post-Graduate Hospital and Medical School, has recently reported some cases of hemophilia cured

by thyroid extract, where all other measures had failed to give relief.

Prof. Polk, of New York, has used the extract with good results in the treatment of uterine fibroids, often effecting a decided retrocession, with amelioration of local symptoms and improvement in general health.

Myxedema is a disease in which thyroid extract seems to be of decided benefit; the mental inactivity and sleepiness often soon disappearing, with a return to normal of pulse and temperature; a gradual sinking in weight and return of natural movements of body, and inflection and modulation of voice.

Its effect is almost magical in cretinism, and in children with a tendency to it, as indicated by the dull, heavy features, flat, flabby condition with recurring persistent cracks and fissures of the skin, and mucus discharges from the nose.

Sometimes in the late stage of exophthalmic goitre thyroid extract seems to be of some service, especially when the patient is taking on weight, apathetic, sleepy and has no headache or palpitation; but is contraindicated if the symptoms are the opposite.

The extract is employed in the treatment of obesity with marked effect, but it is not a safe remedy, and should be given in small doses, if at all. How it acts in obesity we do not certainly know, but some observers suppose that in some way it increases the metabolism in the cells of the body, and enables them to more vigorously split up the fat within their walls.

Gauthier, Lambret and Potherat report excellent results from its use in cases of ununited or retarded consolidation in fractures. The gland has been used in numerous other diseases, but with no very definite or positive results.

It should not be administered in tuberculosis, and very seldom in cases of grave heart disease, and in any case should be discontinued when symptoms of thyroidism appear, such as tachycardia, ophthalmos, oppression, glycosuria, albuminuria and irritability.

Suprarenal Gland.—The whole medical profession has been watching with great interest the wonderful development of suprarenal capsule therapeutics. Adrenalin, the active principle of the gland, was first isolated by Jokichi Takamine, a Japanese student of New York, and is 1,000 times stronger than the fresh gland extract. It is a light white microcrystalline substance, with a slight alkaline reaction, forming salts in solution with acids.

Adrenalin chloride, in 1 to 1,000 solution, is

the preparation in common use, and this may still be diluted further with normal salt solution, to the desired strength.

Adrenalin is the most powerful astringent and hemostatic known, and its action is very positive and certain, so that its field of usefulness seems to be very wide. One drop of a 1 to 10,000 solution will cause the conjunctiva to appear bloodless in less than one minute.

It may be used locally when there is mucus membrane congestion, capillary hemorrhage or inflammation, and when used in conjunction with cocaine solution it increases to a marked degree the duration and extent of the cocaine anæsthesia, and lessens the loss of blood.

In nasal and orificial surgery it scores its greatest triumphs, rendering operations bloodless and less difficult. It has been used with most excellent results for the relief of hay fever, asthma, and many other conditions of the nose and throat, and indeed in congestion and inflammation of mucus membranes wherever found, when it is possible to make topical applications.

When administered internally the physiologic action of adrenalin is very powerful; ten drops of a 1 to 1,000 solution on the tongue, internally or intravenously, will exert a rapid and marked influence upon the general muscular system, and especially upon the walls of the heart and blood vessels, causing an enormous rise of blood pressure.

In all conditions of low vaso-motor tension, with sudden and severe cardiac failure, as in shock from anæsthesia and narcotic poisoning, 10 to 30 drops of a 1 to 1,000 solution should be given on the tongue every half hour. It promises much if used promptly in all cases of sudden collapse from a failing heart.

Ovarian organo-therapy has developed nothing definite, and it seems very doubtful if we may expect anything certain, as in all probability the theory which suggested its use, as with some of the other extracts, is faulty, and its administration is founded upon a wrong supposition of the function of the ovary.

Ovulation seems to be the special function of the ovary, and it is at least doubtful if it manufactures any peculiar product. Some observers have reported favorable results from the use of ovarian extract, in conditions arising at the climateric, or where the ovaries have been removed by the surgeon, but there is nothing positive or promising.

Extracts of other glands and organs have been

used, but like ovarian extract, hold a low and uncertain position in therapeutics, and time with diligent research alone will show whether or not there is any virtue in them.

GUNSHOT WOUND OF BOWELS; SEVEN PERFORATIONS; LAPAROTOMY; RECOVERY.

By LEWIS HOLLADAY, M. D., Orange, Va.

The patient, a robust colored man, age 25; being under arrest, attempted to escape, and was shot by an officer March 1, 1903, with 32 calibre pistol. The ball entered the left lumbar region about 1 c. m. above crest of ilium. The apparent direction was upward, forward and inward. The patient had eaten a hearty meal at noon, and another about 7 P. M. He was shot about 8:30 P. M.

I saw the patient twenty or thirty minutes after he was hurt. He was lying upon the floor of the county jail, pretty well soaked with whiskey, but sufficiently alive to his surroundings to complain of violent cramps in his abdomen, to relieve which I gave him gr. $\frac{1}{4}$ of morphia hypodermically. The officer stated that at the time of shooting the man—in the act of dodging under a near-by freight car—was only a few feet off, and that after being shot he jumped up and ran 100 yards or more. He soon emptied his stomach by vomiting freely; no blood in vomitus. Remembering that he had eaten freely at noon, with no movement from the bowels that day, it was evident that the intestines were pretty well filled.

From the apparent direction of the bullet, I felt sure the intestines had been perforated, and advised immediate operation accordingly. This being declined that night, I gave him later on another hypodermic of morphia, and the following morning I again insisted upon the necessity for operative interference—the patient's condition was evidently growing progressively more serious. However, after being told frankly that each hour lessened his already small chances of recovery, he elected to wait until his father could arrive. After declining immediate operation here, I had advised taking him by first train to Charlottesville to the nearest hospital. This advice was also declined.

His father arrived at 11 A. M., the morning after the shooting. After seeing his son, he

came to me and had the situation frankly explained to him, with the assurance that an operation, though performed under many difficulties, offered the only possible chance of saving his son's life. But the one characteristic of both father and son at this time seemed to be a masterly and well-nigh criminal inactivity. Finally, however, at 3 P. M., I was requested to operate, but could not procure assistance before 5 P. M., just twenty-one hours after the shooting.

With the permission of the judge of the county court, I had the patient removed from the jail to my office. Dr. C. H. Moncure, of this place, kindly administered the anesthetic (chloroform), and, with the assistance of Dr. W. S. Phillips, of Rapidan, Va., I proceeded to operate.

The abdomen being thoroughly cleansed, I made an incision in the left side, extending from just below the costal margin nearly to the anterior superior process of the ilium, then inward parallel to Poupart's ligament for about 2.5 c. m. The parietal peritoneum presented a healthy appearance, but upon opening same quite a quantity of bloody serum escaped through the abdominal opening, and continued to well up with each manipulation of the intestines. The intestines in places were covered with pus and badly inflamed here and there.

A careful search revealed seven perforations, which were sutured as discovered. There were four perforations in the small intestines, two in the descending colon, and one in the transverse colon. Just opposite to this last perforation the bowel was badly contused. Evidently the bullet was too nearly spent to penetrate both walls of the colon at this point, and having perforated one side lodged in the gut. At least this is my opinion; the ball was not found. This last perforation was larger and its edges more ragged than the others, and it was sutured not without some difficulty—the stitches were inclined to tear out. It was deemed best not to irrigate the abdominal cavity, but with gauze sponge the bowels were wiped as clean as possible. Then several strips of iodoform gauze were passed entirely across the bowels and the ends brought through the abdominal incision and left for drainage. The abdominal incision was then closed—leaving, of course, ample room for the drains.

After applying dressing of gauze and absorbent cotton the patient was conveyed on a stretcher

back to his prison quarters. Fine aseptic silk was employed in suturing the intestinal wounds. The edges of the wounds being turned in, the healthy serous surfaces were brought into apposition by the continuous Lembert suture. Time of operation, two hours. Cardiac stimulants had to be used two or three times during the operation. The patient stood the operation remarkably well. Pulse now 132; temperature 101° F. He passed a fairly comfortable night, receiving 1-30th gr. strychnia every 4 hours and gr. $\frac{1}{4}$ of morphia p. r. n. No food was allowed for forty-eight hours—only a little brandy and water. At the end of the third day a saline was administered, which, in due time, produced a satisfactory movement.

In spite of the daily *partial* withdrawal of the gauze drains, they stuck considerably, and their withdrawal produced no little discomfort, and, at times, actual and decided pain.

For four days the wound seemed perfectly healthy, with only a little serous discharge. On the fourth day the drains were all removed, except one, and the next morning a dark discharge appeared with a decided fecal odor. Notwithstanding the continuation of this fecal discharge the patient's general condition seemed no worse, but in a day or two this fecal discharge became so profuse that I reopened the abdominal wound for better drainage. Protecting adhesions had evidently formed and walled off the peritoneal cavity. Regular movements were obtained from bowels.

His temperature ranged from 99° to 102° F. Pulse 115 to 140. His bill of fare contained albumen water, milk and lime water, and liquid beef peptonoids. From the first he was troubled greatly by gas accumulations in his stomach. This was relieved by passing the stomach tube as often as necessity demanded; as a rule, two or three times in 24 hours.

Finding it impossible to secure proper nursing for him in the jail, and as the unsanitary condition of his surroundings by no means enhanced his chances of recovery, I decided that the risk of moving him would be small compared with the greater advantages he would have in a hospital. On March 9th, the law having relinquished her hold upon him, I took him to Washington and turned him over to ambulance surgeon of the Freedmen's Hospital. At the time I gave the surgeon a brief history of the case, and asked to be advised from time to time concerning his progress. The following letters were received in due course of time:

WASHINGTON, D. C. March 17, 1903.

Dear Doctor,—In reply to your letter concerning ———, who was admitted March 9, 1903, I have to inform you that his condition is somewhat improved. The wound in the intestines is smaller, and shows a tendency to close entirely without further operative procedure. I will be very glad if you will give me a complete history of the case, showing the nature of the operations and what was found. Very respectfully, W. A. WARFIELD, *Surgeon in Chief*.

Replying to this letter, I wrote him substantially as reported above. March 26th he replied as follows—viz.: "The condition of ——— is somewhat alarming; the wound closed soon after his admission, and recently reopened. He has now symptoms of peritonitis, and is in no condition for surgical interference." I heard no more until April 22d, when he wrote: "Since my last letter the condition of ——— has improved, so much so that he has been able to sit out of bed a short while." And finally, May 27th: "In reply to your letter of recent date, concerning ———, I have to say that he left the hospital May 9, 1903, cured. We have not heard from him since, and have no idea of his whereabouts." I have since learned that the patient is at home, Manassas, Va., and well.

It is possible that in removing the gauze drains one of the perforations was partially reopened, the gauze having stuck somewhat tightly. The amount of pain caused by removing them offers no small objection to the employment of gauze strips for the purpose.

Orange, Va., June 10, 1903.

Analyses, Selections, Etc.

Iodine Treatment of Puerperal Sepsis.

Dr. W. R. Pryor, Professor of Gynecology, New York Polyclinic, recognize (*N. Y. Med. Jour and Phila. Med. Jour.*, August 22, 1903,) that with rare exceptions, puerperal sepsis is a type of lymphangitis, arising from the uterus, which, through absorbents, produces grave remote lesions. The local lesions are insignificant compared with those produced in the remote organs—particularly the kidneys. Yet we cannot ignore the field of origin, for the persistence of activity in the wound of entrance (the

uterus) allows other lesions which may damage or destroy the patient.

Hence sterilization of the original foul wound, by which wound the lymphatics become infected, by a harmless antiseptic, accompanied at the same time by such general treatment as promote the eliminative functions would seem to be best.

In 1895, he began curretting the infected uterus, opening broadly the posterior cul-de-sac for the purpose of drainage and packing them with iodoform. But in many—even the worst cases—there was nothing to drain away except serum, and yet the result of the treatment was perfect. Thirty-seven cases were thus operated on. In 36, streptococci, generally mixed with other germs, were found on bacteriological examination in the uterine cavity, while in all cases streptococci were found in the lym, or serum, or free pus in the cul-de-sac. In every case of puerperal streptococcus endometritis, streptococci are found free in the pelvis, and present in the uterine contents in over 97 per cent. of cases. The presence of streptococci in the uterine or pelvic contents alone furnishes proof of streptococcic puerperal pelvic lymphangitis.

The invariable cause of the infection being found, the local results of treatment were studied. In all cases but one, not a single coccus of any kind was detected in the second dressing, and none were found in any case at the third dressing. Hence the conclusion that application of massive iodoform dressings sterilize the pelvis so far as cocci are concerned.

As for explanation, iodoform, while maintaining its chemical entity as a triiodide of methenyl, has but feeble antiseptic properties. Placed in contact with an open wound in continuity of tissue, the serum tends to break up the iodoform into methenyl and free iodine, and then the chemical shows its power as a destroyer of cocci. The disintegration, however, is slow, particularly so if pus is present in large quantities. But if the iodoform is brought in direct contact with serous membrane, it at once gives up its iodine—partly due to the influence of heat, and partly to the chemical action of the blood serum. Local iodism is produced in a short while, and it is this which sterilizes the pelvis.

But what effect has the iodine in preventing the absorption by the lymphatics of streptococci and their toxins from the pelvis which produce

the destructive lesions in remote parts, proving fatal in from 7 to 25 per cent. of cases? The urine furnishes the strongest evidence of the rapid absorption of iodine and of its general circulation. Taking the first 14 cases as a basis, a strong reaction of iodine was secured in an average of five hours. In certain cases, it appeared in two hours, but there were the cases in which little lymph and no pus were present in the peritoneum; yet the symptoms of septicæmia were marked. In other words, there were grave constitutional symptoms in these cases, but no apparent local lesions.

In all his cases, either enteroclysis or intravenous infusion of normal salt solution has accompanied the operation, to facilitate the elimination of iodine and toxins through the damaged kidneys.

In all, there have been 37 operations; 27 patients had not been previously operated on, and only one died. Of 10 subjected to curettement before coming into Dr. Pryor's hands, 3 died—thus confirming his belief in the mischievousness of merely curetting in these cases.

But the after treatment of these cases, as gratifying as are the results given under curettement, drainage and iodoform, is so technical and consumes so much time that it is difficult to secure for it very general adoption. And the question arises, cannot this sterilization of the pelvis and general absorption of iodine *through the infected lymphatics* be secured in another manner?

With Dr. Jeffries, he has made some researches to clear up doubts and show perhaps a simpler method of securing local and general iodism. These as yet incomplete investigations are corroborative of practical results. Not only is the mortality from this method of treatment much lower, but the morbidity is certainly less, inasmuch as three patients have subsequently borne children.

Excision of Superior Maxilla Under Medullary Analgesia.

Dr. A. W. Morton, San Francisco, Cal., reports the case (*Pacif. Med. Jour.*, Aug., 1903) of G. H., with good personal and family history; age 39. He was an excessive smoker, and had used alcoholic stimulants until five years ago. An injury two and a half years ago penetrated mucous membrane of right jaw, which never healed. The parts ulcerated and a cauliflower growth involved the mucous membrane of

the right superior maxilla, which proved to be carcinoma. Decayed teeth were removed, and mouth cleansed. Sterile cocaine hydrochlorate .032 gram (half ounce of solution) was injected into third lumbar space, after dissolving it in the cerebro-spinal fluid, following the usual technique for procuring complete analgesia of the body. Pulse during operation varied from 90 to 100, respiration normal. Patient remained conscious, was not nauseated, and expressed himself as free from pain many times during the operation. The upper lip was divided along middle line excepting around the nose to just beneath the inner canthus, thence along lower border of outer canthus; soft structures were raised outward, exposing the superior maxillary; hemorrhage controlled by pressure and hemostatic forceps; hard palate divided with a finger saw, back part was separated with forceps and chisel—the whole mass being removed by forceps—also removing the periosteum from orbital cavity; hemorrhage controlled by pressure and Capuelin's cauterizer; soft parts removed by cauterizer; no secretions or blood passed into lungs during inspiration or afterwards, as these were wiped away as soon as detected. During the operation the patient asked that the other side be removed at once, while he was thoroughly anesthetized, if there was danger of future involvement. Wound closed by interrupted stitches; skin united by primary union. Considerable depression of right jaw resulted.

Two months later, patient entered hospital for correction of deformity. We injected at three different times 40 c. c. of paraffin, with melting point 109° F., which entirely removed deformity, except scar, and very much improved his articulation. The paraffin was injected by commencing in the subcutaneous structures just beneath the deformity, extending to each side for support.

This case demonstrates the great advantage of medullary narcosis (?) for operations about the buccal cavity, and also the good results of the paraffin. The advantages of this form of analgesia for such operations are:

1. Patient remains perfectly conscious during operation, which prevents foreign material entering the lungs and producing suffocation, and, later, pulmonary complications, which forms one of the great objections to general anesthesia.
2. Anæsthetizer and cone are out of way of operator, which are often a source of delay.
3. It can be used in heart and lung diseases and kidney complications with less danger than any general anæsthetic.

4. Shock of operation is diminished, and there are not the severe disturbances which follow a general anæsthetic.

Dr. Morton has used this form of analgesia in over 1,000 cases—80 being operations above the diaphragm and many of them about the buccal cavity. It so simplifies the work in this region that he would very much fear to do such operations under a general anæsthetic—even if he had to do a preliminary tracheotomy for administering it. He has thoroughly demonstrated that cocaine is satisfactory for operations in any part of the body, and in many cases it is more desirable than a general anæsthetic.

Modern Treatment of Fractures.

The following is a synopsis of a paper read by Dr. H. S. McConnell, of New Brighton, Pa., before the Medical Society of the State of Pennsylvania, at York, Pa., September 24, 1903:

In these days of brilliant operations, minor or bloodless surgery is prone to be neglected, though the general practitioner daily meets and must of necessity treat them. In the treatment of fractures, we have not reached the ideal, nor is there a decided uniformity in methods of retaining the fragments. If there was a universal condemnation of all patent and ready-made splints, there would be fewer suits for malpractice. Except in rare instances the circular plaster of Paris bandage should be discarded.

Fractures are imperfectly treated owing to faulty teaching of anatomy and surgery in our schools, the subject not being presented so that the student will associate structure with function. An attempt should be made in every case of compound fracture to convert it into a simple. Tight bandaging is harmful. Splints snugly secured are to control muscular action rather than to make direct pressure upon the fragments.

In fractures of the lower end of the humerus involving the joint, the extended position enables the surgeon to inspect and redress without pain, and permits complete restoration of function in the shortest possible time. The proper splints for these fractures are made of absorbent cotton rolled upon itself, covered with gauze, and extending from shoulder to fingers. Fifteen cases treated with cotton splints were characterized by freedom from pain and promptness of recovery.

In fractures of the leg, the "fracture box" should be discarded as a relic of barbarism. The permanent dressing for this injury is best made with three pieces of cotton flannel twice the

width desired—the posterior extending from the middle of the thigh to the malleolus; the side pieces, from the upper border of the patella to two inches below the sole. These should be folded upon themselves, smooth side out, and covered with from 6 to 8 layers of a moist 3 inch plaster Paris bandage by a two and fro motion, lengthwise; then the uncovered portion of flannel brought over the plaster makes them ready for use. The posterior is first applied snugly, while firm extension is made, with a few turns of wide gauze bandage; then the side splints should overlap the posterior, but leave a space anteriorly of not less than one inch, exposing spine of tibia. Advantages of this method are: A light, firm dressing molded into all the irregularities, thereby maintaining extension; cotton flannel and overlapping of splints make it impossible to injuriously constrict the limb.

To make passive motion too early is harmful and unsurgical, and only the slightest passive motion should be made until after four weeks. No joint ever became ankylosed from enforced rest due to fracture; this condition is produced either by imperfect reduction or traumatism. Too early passive motion has caused limitation of motion, and ankylosis in more joints than fractures.

The Value of the Differential and Absolute Leucocyte Count in Case Simulating Appendicitis.

Dr. Barr Snively, Waynesboro, Pa., read a paper on this subject at York, September 23, 1903, before the Pennsylvania State Medical Society, of which the following synopsis was made: Leucocytosis is one of the clinical data not in itself sufficient for a diagnosis. The cases coming to the surgeon without a leucocytosis do not have blood count made early enough. If the routine practice of early and frequent blood counts was carried out, the majority of these cases would be detected before the transient hyperleucocytosis had disappeared, and before the organism could become sufficiently depressed to fail to react.

In the differential estimation of the leucocytes we have a more delicate reaction in inflammatory leucocytosis. Simon, of Baltimore, says, in speaking of the polymorphonuclear neutrophile leucocytosis and the diminution of absence of the eosinophiles in appendicitis it is: "The eosinophiles may, of course, be diminished in other conditions; but the point is that no case

of appendicitis occurs in which they are not materially diminished"; in ordinary bellyaches they are normal. But as soon as inflammatory action occurs they go down and remain down as long as the process is active. Their reappearance is an indication that the attack is disappearing.

The object of the paper is an attempt to show that in a differential blood count, when we have a polymorphonuclear neutrophile leucocytosis and an absence or great diminution of eosinophiles, we have a condition (other symptoms pointing to the abdomen) which warrants exploration.

Treatment of Cough of Phthisis.

Dr. J. Leffingwell Hatch, London, notes that some form of opium is used as an ingredient of cough mixtures. Until recent years, morphia has probably been the most popular, when codein came into general use and threatened to usurp its place. But since the discovery of heroin by Dresser, of Elberfeld, Germany, in 1898, this new analgesic, after careful study, has become the favorite, especially in diseases of the respiratory organs. In 1900, the writer tried a bottle of glyco-heroin (Smith) with a patient with most gratifying results. It does not nauseate, and can be given an adult in teaspoonful doses every two or three hours. Even children tolerate heroin in proportional doses where opium would produce untoward results. This preparation does not contain anything that deranges the stomach, and may be used almost indefinitely without the patient turning against it. Dr. Hatch has used glyco-heroin (Smith) in over 50 cases, with the unvarying result that it relieves cough, reduces temperature, increases the volume of respiration and allays night sweats without causing constipation or derangement of the stomach, does not produce vertigo, nor has it deleterious effect upon the heart. Hence we have in this preparation an ideal cough mixture for pulmonary tuberculosis. Dr. Hatch claims that glyco-heroin (Smith) is a true pharmaceutical product, as its composition and physiological action are well known. But as good things are sooner or later imitated by something advertised to be "just as good and cheaper," he cautions that the practitioner should see to it that nothing is substituted for glyco-heroin, as put on the market by the Martin H. Smith Co., of New York. He appends a number of cases to his report, illustrating the value of this preparation.

Editorial.

Medical Society of Virginia.

Never in the history of this Society was there a more inviting and instructive program announced than for the thirty-fourth annual session, held at Roanoke, Va., September 16-17, 1903. The attendance was unusually large—nearly 300; the social features could not have been excelled, and were well arranged, so as not to interfere materially with the scientific sessions planned. The address to the public and profession on the first night, by Dr. Wm. S. Christian, of Urbanna, Va., was an excellent one. The President, Dr. J. N. Upshur, Richmond, delivered an able address, which is published in this issue. The addition to the membership of the Society was nearly 100. And the few papers read were of high order of merit, and well discussed.

But several facts led to disappointment as to the scientific value of the meeting. The distinguished Honorary Fellow and Leader of Discussion of the "subject selected for general discussion"—*Diagnosis of Gastric Affections*—Dr. John H. Musser, of Philadelphia, was unexpectedly detained by the illness of a member of his family, and Dr. J. C. Hemmeter at the last moment found himself unwell to attend to take part in the discussion.

The meeting began wrong by the full reading of some papers when the authors were not present to support their theses. Time limit of twenty minutes for each speaker, or reader of a paper, and five minutes for discussion by any one member was not tightly drawn—one speaker, indeed, being allowed about an hour and a half consecutively on a non-scientific subject; and the discussions by various fellows which followed consumed at least two hours and a half more of time—with the result of the postponement of further consideration of the matter until the next annual session. It is the only instance in the over thirty years' history of the Society that excessive time during the scientific progress of a session has been consumed by any speakers in non-scientific discussion. By the non-observance of time limit for each speaker, the authors of a number of papers with attractive titles for scientific consideration were cut out of the opportunity of presenting them, except by title. Thus while the few papers read and discussed were of great interest and value, the session was disappointing, so far as the carrying out of the

full scientific program announced was concerned.

In this issue, beside the address of the President, will be found a paper read by Dr. Stuart McGuire, Richmond, Va., on "*Methods to Hasten Epidermization, with Special Reference to Skin Grafting*," which subject is masterly dealt with; also a paper by Dr. J. W. Mallet, University of Virginia, on "*The Serum Precipitation Test for the Identification of Blood Stains*"—which paper, in great part, must soon be engrafted in the text-books of colleges or for practitioners. Other papers will follow in subsequent issues of this journal. Among other papers read and discussed were one on "Blood Pressure," by Dr. Henry W. Cook, Richmond; "Some Experiments and Conclusions in Hypnotic Therapeutics," by Dr. W. H. Wallace, Disputanta, Va.; "Therapeutic Uses of the X-Ray, with Report of Cases," by Dr. Ennion G. Williams, Richmond; "Diet and Drugs in the Treatment of Nephritis," by Dr. Wm. S. Gordon, Richmond; "An Unappreciated Source of Typhoid Infection," by Dr. Paul B. Barringer, University of Virginia; "Some Manifestations of Malarial Poisoning, not Mentioned in Our Text-Books," by Dr. R. Bruce James, Danville, Va.; "Hydrophobia in a Boy—Report of a Case," by Dr. S. T. A. Kent, Ingram, Va.; "Prevention of the Spread of Ringworm," by Dr. F. H. Beadles, Richmond, "Induction of Labor by Means of a Modified Champetier de Ribbes' Balloon," by Dr. Herbert Old, Norfolk; "Treatment of Eclampsia," by Dr. J. H. Rowland, Baltimore, Md.; "Typhoid Gangrene of the Lower Extremities—43 Cases—Spontaneous and Surgical Amputations—Personal Experience," by Dr. Benj. Merrill Ricketts, Cincinnati, Ohio. All the thirty other papers announced on the programme had to be presented simply by title.

Dr. Joseph A. Gale, Roanoke, Va., was elected President for the new year; Dr. R. M. Slaughter, Theological Seminary, was elected Treasurer as the successor of Dr. Richard T. Styll, of Newport News, who was elected an Honorary Fellow; Dr. Wm. S. Gordon, Richmond was chosen to deliver the annual address to the public and profession during the thirty-fifth annual session, to be held at Richmond; Dr. Landon B. Edwards, Richmond, was continued as Recording Secretary, and Dr. John F. Winn, Richmond, Va., as Corresponding Secretary; Dr. P. A. Irving, Richmond, remains Chairman of the Executive Committee, which

committee is to select the subject for general discussion, as also the leader; it has also to appoint the time for the next annual session, etc. Drs. R. S. Martin, Stuart, Stuart McGuire, Richmond, and George Ben. Johnston, Richmond, are the representatives-elect on the part of the Medical Society of Virginia to the House of Delegates of the American Medical Association, which is to hold its meeting at Atlantic City, N. J., during June, 1904.

One of the pleasing features of the sumptuous banquet provided by the Roanoke profession, when toasts were begun, was the presentation to State Senator E. J. Harvey, of Stuart, Va., by Dr. George Ben. Johnston, of the gold pen he purchased with which Governor Montague signed what is known among doctors as the "Harvey bill" last winter, which greatly lessens the opportunity for quacks and charlatans of all descriptions from undertaking their practices in Virginia.

Various receptions were given for the entertainment of the doctors after adjournment of the days' sessions. The visiting ladies were given an excursion to Fries, and receptions at Hotel Roanoke, the "County Club," and by several of the ladies of the city. In short, from a social standpoint, arrangements could scarcely have been more pleasing, or entertainments more generously and hospitably provided.

The Henry Phipps Institute for the Study, Treatment, and Prevention of Tuberculosis

Has arranged for the coming fall and winter a series of lectures by well known physicians on the various phases of tuberculosis. Some of these lectures will be more or less popular in character, and all will be free to the public. The auditorium of the Witherspoon Hall at Juniper and Walnut streets, Philadelphia, has been selected for the purpose, having a seating capacity of nearly twelve hundred people.

The first of these lectures will be given by Dr. E. L. Trudeau, of Saranac Lake, N. Y., during the last week in October, his subject being "The History of the Development of the Tuberculosis Work at Saranac Lake."

The following gentlemen have been invited to give the subsequent lectures: Dr. Pannwitz, of Germany, in November; Dr. William Osler, of Baltimore, in December; Dr. Calmette, Director of the Pasteur Institute at Lille, France, in January; Dr. Herman H. Biggs, of New York, in February, and Dr. Maragliano, of Italy, in March. All of them have accepted

with the exception of Dr. Calmette, who will come if it is possible for him to leave his work in connection with his institute and the International Congress on Tuberculosis, to be held in Paris in 1904. Subjects and exact dates will be announced as soon as possible.

The director and members of the staff of the Henry Phipps Institute extend a most cordial invitation to the profession in general to attend these lectures. It is greatly desired that this inaugural series of lectures given by these gentlemen will prove a success and be largely attended.

The following additions to the staff of the Henry Phipps Institute have been made: Dr. M. P. Ravenel has been appointed assistant medical director and chief of the laboratory; Dr. E. A. Shumway has been appointed ophthalmologist, and Dr. J. F. Wallis has been appointed dermatologist.

Vaccinations Required in France.

According to *Health*, August 22, 1903, the French Government has promulgated a new vaccination law. In the future, three vaccinations, instead of one, shall be obligatory upon all French citizens. The first is to be made during the first year of infancy; the second during the eleventh year, and the third during the twenty-first year of age.

The Diseases of Society

Is the title of a work on Sociology which Dr. G. Frank Lydston, of Chicago, is about to publish. It will embrace a consideration of the crime question, the social evil, etc.

Dr. Eleanor Fairman Preston,

Daughter of Dr. Robert J. Preston, Superintendent of the Southwestern (Va.) State Hospital, at Marion, Va., married Dr. James Thomas Watkins, of San Francisco, Cal., September 15, 1903. The party will be "at home" in San Francisco after October 1st. Dr. Preston was one of the three ladies who were members of the Medical Society of Virginia. She graduated Doctor of Medicine from the Woman's Medical College of Pennsylvania, 1901; passed the Medical Examining Board of Virginia and joined the Medical Society of Virginia the same year. During the latter part of 1901 she was appointed interne in the Hospital for Children at San Francisco, where she served through 1902.

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Original Communications.

Relations of the Medical Profession and Public to Each Other—Responsibilities of One, and Demands of the Other—Work and Achievements of the Profession, and Benefits and Blessings Received by the Public.*

By WILLIAM S. CHRISTIAN, M. D., Urbanna, Va.,
Former Member Medical Examining Board of Virginia, etc.

I feel honored overmuch that without my solicitation, without my desire, and without my knowledge even, I have been selected to make the Address to the Public and Profession on this interesting occasion of the thirty-fourth annual session of the Medical Society of Virginia, and before an audience of the people of Roanoke—before this Society that has done so much to elevate the profession in this Commonwealth, that has done so much for the good of the people of this State, perhaps unknown to them, and before this cultivated audience of good men and fair women of this magic city—people who, while cherishing the memories and traditions of old Virginia, have raised the standard of New Virginia, and are leading in the van of industrial enterprise and material development of this grand old Commonwealth that we love and venerate as our cherished and noble mother.

In making an address to such a mixed audience, the most learned and advanced of the members of the medical profession of this State, and many distinguished gentlemen of the same profession from other States, on the one hand, and a brilliant audience of representative Virginia gentlemen and ladies on the other, the subject that naturally suggests itself is the *Relations that these two classes sustain each to the other; the responsibilities of one, and the demands of the other; the work and achievements of the one, the benefits and blessings received by*

the other. Upon these broad lines I will talk to you to-night. I have no well prepared paper on some obtruse medical subject to read to you to-night, but I shall speak to you face to face and heart to heart.

If, during the brief time I am allowed to address you, I should seem to give too fulsome praise to my chosen profession, I beg you to remember that you cannot call it egotism; that it is not for myself; that I can derive no benefit therefrom; that I have nothing for myself to hope or expect, for by the inexorable laws of nature my career as a doctor is well-nigh run.

Fifty-two years ago last March, when but twenty years of age, I was graduated from the Jefferson Medical College of Philadelphia, and entered at once upon the career of a plain, simple, every-day country doctor. That means that I have had fifty-two years of the most arduous toil that can be assigned man—scarcely lightened by those four years of tremendous strife, when my business then was to try to kill, not to cure—fifty-two years in sunshine and rain, in light and darkness, in summer's heat and winter's cold; fifty-two years of failure and success, of sadness and joy.

Fifty-two years mean also that I antedate most of the great advances, the wonderful discoveries, the grand achievements that have marked the progress of medicine during the latter half of the wonderful century that has just closed behind us. I nearly antedate the use of anesthesia in surgery, for in 1847, before anesthesia was known, or, at least, was used in the country districts, I assisted my father in the amputation of a limb and used my young strength to hold the man while he writhed in agony beneath the knife and the saw. I shall say no more about myself, except to say that these fifty-two years that have brought me in contact with many of the brainiest and best of the profession, have confirmed me more and more in the opinion that our profession is the grandest and noblest and most unselfish of all

*Annual address to the Public and Profession, delivered during the session of the Medical Society of Virginia, held at Roanoke, Va., September 15-17, 1903.

human institutions; has conferred more benefits and given more happiness to mankind than all other human agencies combined that have existed in all the world, throughout all the tides of time.

I shall propound a few very trite and simple propositions as the basis of my remarks:

1. Happiness is the chief desire of the human family.

2. The greatest foes to human happiness are disease and death.

3. That the medical profession and its natural allies is the only organized force now warring against these implacable foes of human peace and human happiness.

To a brief discussion of these plain propositions I now invite your attention.

The first proposition needs no discussion; it is an axiom. It is nearly self-evident to us that every man, woman and child desires happiness, and esteems it the chiefest good. And we can here state without the fear of successful contradiction, that while happiness is sought in many avenues and in many directions, by the immense majority of the human family it is sought and most often found in the pleasures of domestic life, in the cultivation of the affections, in social functions, in the pure, tranquil atmosphere of home.

Many seek it in the acquisition of wealth, but this wealth is often desired only to make home more attractive and its joys and pleasures brighter.

Some seek it in the uncertain pathway of ambition; they love the adulations and acclaims of the multitude. But, alas, for ambition! what is its reward?

"Praise! When the ear has grown too dull to hear;
Gold! When the senses it should please are dead;
Wreathes! When the hair they cover has grown gray;

Fame! When the heart it should have thrilled is numb."

The sweetest, holiest, dearest spot on earth is a typical American home; and the happiest while rosy-cheeked, bright-eyed hygeia is its constant inmate. I don't mean a simple house, a simple pile of brick and mortar, however stately it may be, however elegant may be its adornment and its embellishments, but the home where the heart is, where love holds supreme sway, where father and mother, and husband and wife, and brothers and sisters, are governed by only one law, and that the law of love, each in honor preferring one another. In such a home the "joys that

cluster around its broad hearths are too nearly like heaven to endure upon earth."

What is it that can threaten and destroy the peace and happiness of such a home? Fire may come and consume the treasures that it took half a lifetime to collect. Bankruptcy may come and you may see your household goods pass to strangers under the hammer of the auctioneer. But these cannot chase away for long the smiles that linger in the eyes and wreath the life of love. Such foes as these to human happiness can easily be overcome, for the objects of affection are still there to bloom and ripen into flavor and fruit.

The most mighty and most permanent foes to the happiness of home are, as I declared, disease and death. When pale-visaged disease enters, then all is changed; a shadow sombre and deep creeps across the sunny threshold of home—a grim, mis-shapen monster, whom no artist can paint, no language can describe, in whose presence every flower withers, every joy dies, every hope is turned into despair! This grim, gaunt, skeleton figure has been enthroned in all the world as the king of terrors.

"Come to the bridal chamber, Death;

Come to the mother when she feels for the first time
her first born's breath;

Come in consumption's ghastly form—

The earthquake's shock—the ocean storm,

And thou are terrible.

The tear, the knell, the pall, the grave, the bier,

And all you know or dream or fear of agony are thine."

In its presence the rosiest cheek is blanched like the snow; the stoutest heart is turned into ashes. This fell destroyer of human happiness and human life, this implacable foe of humanity is year by year, month by month, week by week, and day by day, invading the fair, sunny homes of your land, panoplied in the most repulsive armor, bearing in his hand "the pestilence that wasteth in darkness and the arrow that flyeth at noonday," having in his train as agents to do his will the most frightful diseases that afflict humanity: Cholera, yellow fever, small-pox, plague, diphtheria, consumption, his most trusted and beloved courtiers, all reaching out their loathsome fingers to clutch the heart strings of the unconscious victim. And who is it that accepts the guage of battle that is thrown down by this relentless monster? I answer, *the doctor*. Often single and alone, and with Dr. William McClure, the old Scotch doctor, we can say: "I will have a sare wrastle with death, the night." And this battle for a life—a battle that means

often more to the individual, more to the inmates of the home than any great battle in the world's history—is often fought* in the sacred precincts of the home, among the household gods, the Lares and Penates, in the holiest of holies, the bedchamber of the home. In this sacred spot the great battle is often to be fought, to be lost or won. What tremendous consequences often hang upon the uncertain issue! Sometimes it seems to us that it is like nothing so much as the storm that is born in mid-ocean, the terrible cyclone that gathers to itself all the winds of the zones, heaping up wave upon wave, until we absolutely stand helpless and appalled in the presence of its devouring wrath.

But the doctor accepts the gauge of battle, however unequal seems the contest, sitting under the shadow of the wing of the death angel, hearing the despairing moans of afflicted loved ones (the saddest sounds of earth), all his senses alert, heart and brain strung to the highest tension, with weapons as keen as the scimeter of Saladin. He enters the unequal conflict sometimes, alas! to be overwhelmed, and the black shadow settles like a pall upon that home, to be lifted never more. But often, very often, thank God, inch by inch, step by step, he drives the grim shadow back through the darkened doorway, till at last "it flies like the moon-eyed monster of dismay chased on its night steed by the star of day."

But there is an idea strong in the minds of some, and these not the least intelligent even (a class, however, rapidly growing less), that doctors never save life, cannot save life; that a man cannot die until his time comes, etc. These are imbued with the fatalism of the Mohammedan, and cry: "Allah, Achba," God is great; and idly fold their hands and wait and trust to Providence, or chance, or destiny, or whatever they choose to call it. Such are not impressed by the spirit of the twentieth century, but belong to the class of Elspeth McFaddin, who, when her associates were praising Dr. McClure for having saved the life of Saunders, firmly dissenting from their assertion, yet wanting to say something in praise of the good old Scotch doctor, remarked with strong Calvinistic logic: "If we live, we live; if we dee, we dee; but I will say for Dr. Weelum, that he can aye keep up a little moisture on the skin." And that is about the modicum of praise some of us get after the fiercest battle and most brilliant victory ever won.

There are thousands and scores of thousands in this State now living who are trophies of the victories that doctors have won over death. Who can tell how many persons, men and women, now the possessors of homes and families, leaders in society, pillars in church and State, whose lives were saved in childhood, whose mortal remains, but for the skill and care and patient work of the doctor, would long ago have been mingled with the elements and "become a part of the insensible clod which the rude swain turns with his share and treads upon." How many in this hall and at this hour are indebted to the doctor for the glow of health upon their cheek, the sparkle of gladness in their eye, for the love and happiness in their home—aye, and for life itself! How little we think of all these things, and of the tremendous influence exerted by many whose lives are saved in childhood and youth, impressing the generation in which they live, and passing this influence down the corridor of time to generations yet unborn! Do doctors save life and bring sunshine to homes that have felt for a time the oppressive shadow of the death angel's wings? Who can doubt it? Who can doubt it? As well doubt that the moonbeams are ever reflected upon the placid lake, or that the silent stars ever shine out from the depths of the sea.

Mr. President, I say to-night in the presence of this learned and splendid audience, and in the fear of God, that if an angel of light, one of those brilliant creatures that circle nearest around the burning throne of God, had been let loose through the golden gates of paradise, commissioned to bring to earth the richest joys and blessings of heaven, he could not have shaken from his radiant wings a brighter bow of hope and promise than that which your profession has benignly cast over many a roof-tree in this land. Ah, yes, my countrymen, you have your parish registers and family Bibles, in which are recorded the births and deaths of your households, but you have no record of the lives saved by the patient, tireless doctor. That record will never be read till we reach those tremendous spheres where the spirit, unclothed of the habilaments of humanity, will stand in the presence of God, with an intelligence but a little lower than the angels; with a vision not dependent upon the wonderful but delicate mechanism of the human eye; with a hearing not dependent upon the intricate labyrinths of the human ear; with emotions not dependent upon the

mighty heart throbs of the human breast, but with a spirit eye that can look out beyond the confines of the universe and back to things that happened before the birth of time—with a hearing that can hear, not only the songs of the angels and the hallelujahs of the redeemed, but can listen to the lingering cadence and symphony of that greatest of all songs, the song that the morning stars first sang together on the morning of creation. Then, and not till then, will you read this record, written by the finger of the Almighty Himself, in letters of fire across the dome of the universe.

Now let us see what the medical profession and its natural allies is doing for the people. In the first place, I claim that the Medical Society of Virginia is equal in intellectual attainments, in culture, in wisdom, in brain and mental energy, to any body of men that meet in this State for any purpose. It is equal, in this respect, to the General Assembly of Virginia, to the Baptist General Association, the Methodist General Conference, the Presbyterian Synod, the Episcopal Council, or any similar body, except in forensic eloquence—that's a necessary part of all the organizations I have named, but by no means a part of ours. I claim that the American Medical Association is equal in intellectual power to the Congress of the United States.

Now, what is the great subject upon which this aggregation of intellectual power of all these and hundreds of thousands of others not in these organizations is now concentrated? It is to discover further means for the cure and prevention of disease, and thus to lighten the woe and increase the happiness of the human family. That is the great task of our profession all over the world. The most painstaking investigation, the most tireless research, the most skilful inquiry, the most important experiments, the most intricate vivisections are daily and hourly made by the wisest and most capable chemists, microscopists, biologists, physiologists and pathologists—all to this one end. How much in this direction has already been accomplished, I haven't time to tell. What has Lysterism done for surgery? What has Pasteurism done to modify the most dangerous diseases and render immune those exposed to their deadly poison? Many of those frightful maladies that were a terror to our people have been shorn of their power and chained under the control of the health officers. But strange to say,

the most difficult task these health officers have before them is to get the co-operation of the people in a work that is solely for their good.

Year by year they have appealed to your constituted authorities, but your Legislature in this State has reluctantly and niggardly doled out a few paltry dollars, when it is well known that every dollar spent in this way means thousands and sometimes tens of thousands saved to the people, besides a mass of suffering and misery that would be appalling if it could but be seen.

The medical profession has steadily pursued this work inspired by the most unselfish philanthropy, the purest patriotism that has characterized any other set of men on God's green earth. We live in a wonderful age. The triumphs of mechanical skill, the wonderful inventions and discoveries of science, the accumulated devices for the betterment of man, all the forces of industrial enterprise, have astonished the world. The science and art of medicine and surgery have kept pace with these great enterprises and made the same marvellous progress in its own domain. But it is painful to know that the people are not co-operating with us, and are indifferent to the mighty efforts that are put forth for their own benefit.

Mr. President, our fair land is absolutely billowed with the graves of those who die from a reckless violation of the plainest laws of health. They die when there is no necessity for it, and leave behind them a train of sorrow and mourning that is sad to behold; but the work still goes on; the marvels of triumph that have been effected by surgery would have been called miracles years ago, and some of these distinguished gentlemen before me would, a few centuries ago, either have been burned at the stake as wizzards or worshipped as gods. No such wonders have been seen since the Divine Man of Nazareth, the greatest of all healers, trod the shores of the sea of Galilee and wrought His wonderful works in the cities and the wilderness of Judea. By your skill the lame have been made to walk, the blind been made to see, the deaf to hear, and the poor and despairing have had the gospel of health and hope preached unto them.

What of the future of medicine? I hope you have understood by this term I mean every branch of our great profession.

The most wonderful century of all the ages has just closed behind us—wonderful in every branch of human industry; in every develop-

ment of scientific inquiry; in every conceivable form of energetic progress. The forces of nature have been largely conquered and chained and harnessed for the uses of man; "the lightnings of heaven have yielded to your philosophy"; the secrets of earth have been revealed to your inspection; all the realms of nature have been ransacked; all the elements have been laid under contribution; earth, air, fire and water, the fauna and flora of the land, the products and chemicals of the sea, have all contributed to the armamentarium of the doctor. What else is there left? Much, very much. The wisest men think, among them Thomas A. Edison, that the wonderful inventions and discoveries of the nineteenth century are but the suggestion and promise of the twentieth century. I call upon the young men of our profession, who are here to-night, to open wide their eyes and hearts and minds to the oncoming light of the wonderful century, in whose vestibule we now stand, whose mighty womb is pregnant with undreamed of possibilities, only awaiting the further skilful development of our masterful science to empty the product of its great conception into the expectant lap of a grateful world.

Surgery, whose achievements and successes have astonished the world, will soar higher still and find other fields to conquer. Etiology, biology, bacteriology will reach perfection. The weapons of medical warfare now in use will be discarded for others more powerful and effective for keeping the hearse from the door. Diseases, the very mention of whose name now cause you to shudder and grow sick at heart, will be stamped out and afflict humanity no more. If cancer fails to yield to Röntgen and Radium rays, something else more powerful will be found. Before the close of this century consumption, that ghastly form, even at this hour trailing its pale shadow and withering blight over a million of homes in this land, will be a thing of the past or shut up by quarantine in proper sanitariums. Drunkenness will be banished or punished as a crime with jail and penitentiary. The reckless violators of the laws of health will be treated as criminals and punished as other law breakers. What a millennium of health and happiness will come to our people! The hearse will not be seen so often at the door, with its little casket in which lies the remains of some mother's darling, leaving behind a sorrow so pathetic as could call tears from the eyes of pitying angels. We will not hear then of 30,000

little ones dying in a single summer in the city of New York, mainly for the want of proper hygiene and proper food. The public and the profession will require better things of their law makers. Time will not allow me to follow this picture further, but in my heart I believe all this and much more is awaiting the issue of the present century.

"Tis the sunset of Life gives me mystical lore;
Coming events cast their shadows before."

The profession of medicine once consisted largely of pretended magic, charms, incantations, diabolism and humbug that impressed the fancy of the superstitious; but now it is steadily advancing up to a perfect science and illuminating the world with light and hope. Its light is not that of the ignis fatuus or will-of-the-wisp that glows with lambent flame for a time over pestilential marshes and then goes out to leave the darkness darker still, but it is the beacon blaze upon the rock, sending out its life-giving rays over the troubled sea of humanity, warning the whole world of danger and guiding to health and rest. It is not a frail and leaky craft recklessly thrown out on relentless waves, but it is the grand and glorious lifeboat, manned by a sturdy life-saving crew, whose strong arms, brave hearts and clear brains go out into the darkness of the storm to seek and to save the shipwrecked and the lost. It is not the uncertain offspring of a misguided enthusiasm or of ignorance and superstition, but it is begotten of the loftiest philanthropy and the broadest humanity. It looks upon every one, however miserable or poor or obscure, as a brother and entitled to the same patient care and skilful attention as the highest and noblest in the land, and grows hot with indignation to see such robbed and wronged and ruined by the charlatan and the quack—those monsters of woe and minions of greed.

Yes, my brethren, our profession is to-day the great life-ship of the world, out upon the ocean of time—this twentieth century time—with smoother seas, brighter skies and fairer winds than it ever had before. Its broad white sails are bellying to the breeze as it moves majestically on to a higher and more glorious destiny, and I cannot forbear in conclusion to apply to it the apostrophe which the greatest American poet applied to the Union, and will say:

"Thou, too, sail on, oh, ship of life;
Sail on, our profession, strong and great;
Humanity with all its fears,
With all its hopes of future years

Is hanging breathless on thy fate.
 We know what masters laid thy keel—
 What workmen wrought thy ribs of steel;
 We know each mast and sail and rope,
 What anvils rang, what hammers beat,
 And at what forge, and in what heat
 Was shaped the anchors of thy hope.
 In spite of wind and tempest roar,
 In spite of false lights on the shore—
 Sail on, nor fear to breast the sea,
 Our hopes, our hearts, our prayers, our tears,
 Our faith triumphant o'er our fears,
 Are all with thee, are all with thee."

TREATMENT OF ECLAMPSIA.*

By J. M. H. ROWLAND, M. D., Baltimore, Md.,

Professor of Obstetrics, Baltimore Medical College, etc.

You will see before I am through that I bring you nothing that is new, and if any apology is needed for rehearsing what is already well known to all or most of this Society, I will say that it has always been my opinion that in a medical society made up for the most part of men engaged in the general practice of medicine, it is far better to rehearse and insist upon facts already known to a part of the profession and useful to all its members, than to bring new theories or new ideas which have not been thoroughly tested and their value properly determined.

If I ask you to follow me while I discuss the *Treatment of Eclampsia*, I do so because I believe the attitude of the general practitioner toward these cases leaves much to be desired. In some cases brought to us in the hospital I have been amazed to see what seems at this day almost criminal neglect, not only in the conduct of the treatment of eclampsia, but in the care of the pregnant woman with regard to the condition known as toxæmia of pregnancy.

Even at this day it is a common practice in some localities, and it is the practice of a certain proportion of men in all localities, to consider that their attention to a pregnant woman begins when she enters into labor. Their patients call to see them once, or possibly send their husbands to them, more for the purpose of fixing the date of the expected confinement upon the mind and book of the physician than for giving any history of the patient or statement of her condition, or for the reception of any advice from the physician as to her mode of living,

which might bring her down to full time in much better condition for weathering the storms of labor than she can possibly be without it; and these physicians often submit to this view of the patient and encourage it by dismissing the patient with the injunction to send for him when he is needed, and this is frequently the last time the physician and patient see each other until the advent of labor. In some instances it is even worse than this, the physician not even being informed of the case until sent for to deliver the woman.

This is an inexcusable state of affairs, and yet it is a true bill against many physicians, and just as long as any great number of physicians allow such conditions to exist in their practice just so long will there occur cases of eclampsia.

As a basis for the discussion of the treatment of these cases, I take it for granted that we are all agreed that the condition which we are to discuss is a toxæmia, its real nature unknown, its source unknown, with the toxic substances present in the blood possibly in all the tissues of the patient, and that treatment aims at the immediate control or removal of the effects of the poison or poisons, and the most rapid elimination of the poison compatible with the safety of the patient or the two patients, as the case may be, who are under our care.

The following conclusions from Banchord's experiments show probable source of toxæmia. I quote them merely to show indications for treatment:

(1) Food, especially nitrogenous food, as muscle and food containing salts of potassium.

(2) Bile.

(3) Putrefaction in the intestines and absorption of its products.

(4) Toxic materials being constantly produced by the metabolism of all the cells of the body. To this may be added metabolism of the fetal tissues. (Clinically, it is often observed that upon delivery of child or upon the death of child in utero convulsions cease.)

The first consideration, then, in the treatment of eclampsia is its prevention through proper treatment of the pregnant woman. In other words, the prevention of the toxæmia of pregnancy.

This is a simple matter. It means simply fresh air, exercise short of fatigue, systematic bathing, avoidance of constipation, common sense dressing, carrying weight of clothing from shoulders, thus avoiding pressure upon abdo-

*Read before the Medical Society of Virginia during its thirty-fourth annual session, held at Roanoke, Va., September 15-17, 1903.

men, wearing proper clothing to prevent chilling of limbs when the abdominal tumor carries the skirts away from the limbs, avoidance of exposure to cold and drafts, a diet of nutritious and easily digestible food, which does not contain too large a proportion of nitrogenous elements, frequent examination of urine, so that extraordinary changes from normal may be noted, inspection and examination of patient as frequently as possible to ascertain the history of her pregnancy and her physical condition. If this be done a serious toxæmia of pregnancy will seldom occur. If, because of our neglect, or the failure of the patient to carry out our instructions, or in a few cases in spite of our care and careful attention of our patients to the details of living, a condition arises which, from observation, we know to be the evidence of toxæmia, and shown by albumen in urine (usually), hyaline casts, diminution in amount of urea, edema of extremities, bile (sometimes), jaundice (occasionally), gastric disturbances (usually nausea and vomiting coming on suddenly late in pregnancy), severe epigastric pain, cramps in the limbs, headache, disturbances of vision, high arterial tension, mental lassitude, or what, in my experience is just as common, some unusual mental excitement, we know that active treatment is demanded to remove the cause of these symptoms. Our second consideration, therefore, is the relief of the toxæmia of pregnancy.

If the toxæmia is mild in character, little edema, little or no albumen, no jaundice, no bile or casts in the urine, some nausea or vomiting, with no severe epigastric pain and no disturbance of vision, it will probably be sufficient to give an active purge, cut down food to bread and milk, increase diuresis, give chloral to combat nervousness, and increase fresh air if possible without too much exercise.

If patient grows worse or has a severe toxæmia when first seen and presents symptoms which we may easily recognize as immediate precursors of eclampsia, particularly severe and persistent headache, disturbances of vision, severe epigastric pain, jaundice accompanying albuminuria, diminution of urea with casts and œdema, active treatment must be instituted.

This consists in complete rest in bed, milk diet, active purgation with mercurials, jalap, colocynth, or salines, avoiding potassium, chloral, alone or in combination with the bromides, nitro-glycerine, salt solution per rectum, and if

the patient is nervous; hot pack. (I wish to speak particularly of the hot pack when I discuss the treatment of the attacks.) This course of treatment usually is sufficient. I have seen what appeared to be a serious toxæmia practically disappear upon giving patient complete rest in bed, purgatives, milk diet, and hot pack. If, however, no improvement occurs, we have no choice but to induce premature delivery by some of the well known methods.

This is not a place for the discussion of the proper method of producing premature delivery, but premature delivery is so often done in these cases that a few words concerning methods is not amiss. I have seen very few cases in which, with no dilatation of the cervix present, I consider the rapid forcible dilatation of cervix, beginning with steel dilators and finishing dilatation with the hand, justifiable. There is too much shock, almost always considerable laceration of cervix, increased danger of sepsis, and too great a temptation to deliver a child through an imperfectly dilated cervix, a proceeding which not only as before stated results in lacerations of cervix and not so very infrequently the lower uterine segment, but often causes the death of the child as well.

We like very much better such methods as dilatation by the Barnes' bag or the de Ribes balloon, because they are certain and accomplish the result without shock, and in a manner corresponding more nearly to the natural labor. We have discarded irritation by introduction of bougies as too uncertain and as much too slow, as forcible manual or instrumental dilatation is too fast. It is true we frequently find a cervix so soft and dilatable that we have no difficulty in rapidly overcoming the slight resistance it offers, but in the majority of cases, where no dilatation is present, we prefer the slower methods if by any means we can prevent convulsions.

Our plan, and I believe it corresponds to that recommended by most writers, is to empty the uterus as rapidly as possible without serious injury to the mother, and I must insist that in cases where the cervix is rigid and unyielding and without the beginning of dilatation, I consider even a convulsion less serious than forcible dilatation.

I should agree with Williams that even Cæsarian section is a more conservative procedure in these cases. Before taking up the treatment of the convulsive attack, I should like to remind you that many eminent writers, among them

Davis and Edgar, consider it a wholly preventable disease. I quote Edgar's final statement in regard to the prophylaxis of eclampsia:

"When obstetricians shall accustom themselves to watch their cases of pregnancy, not only for the physical signs of pronounced renal inadequacy as an index of an approaching eclamptic attack, but also for the general symptoms of the overcharging of the blood with toxic material, as high arterial tension, headaches, gastric disturbances, physical and mental lassitude, and further for failure of the bowels, liver, skin and lungs properly to perform their functions and intelligently treat the same, then, and then only, shall they have done all in their power to correct the pre-eclamptic condition and avert an impending eclampsia."

I am not yet ready to subscribe to the opinion that eclampsia is entirely preventable, but I do believe that almost every case of eclampsia might have been prevented, and that the time is coming when a case of eclampsia occurring in a patient who has been under the care of a physician for some time previous to its occurrence will bring discredit with it just as surely as a case of puerperal sepsis.

Davis says that there is no more reason for eclampsia than for puerperal sepsis. This brings us to the third consideration—*treatment of convulsive attacks*. Treatment here has three indications:

1. Control the convulsion by medicinal means. There are but four remedies in this class which are certain in their action; at the head stands

Chloroform.—The control of eclamptic convulsions by chloroform anæsthesia is recommended with a greater or less degree of enthusiasm by almost every writer. There can be no doubt of its efficacy to control the convulsions. In my opinion its usefulness ends after its administration to produce anæsthesia for any operative procedure which may be considered desirable. Other than this, and for this of course it is indispensable, I have never been able to satisfy myself that it has a great degree of usefulness. In the worst or very bad cases it must be given too continuously to be without serious danger, and in mild cases control may be had by safer means, and it is not needed.

Morphine.—Here again there can be no doubt of the efficacy of the drug to control the convulsion. It is not so certain as the chloroform, neither is it quite so dangerous. Its action may be continued over a greater length of

time with much less danger to the patient. When given it should be given in one-fourth grain doses, hypodermically. Williams repeats this dose, if necessary, until three-fourths gr. is administered. Veit publishes statistics showing sixty cases treated with morphine alone with but two deaths. Surely no lower mortality rate than this can be expected. He injects $\frac{1}{2}$ gr. in each convulsive seizure, having administered as much as 3 grs. in a few hours. I certainly should not like to depend upon morphine alone, especially if it requires such doses as these. The prolongation of the post-eclamptic stupor which follows the use of morphine even in mild cases, and the locking up of the excretions which invariably accompany its use, are, in my opinion, a contra-indication for its prolonged use in large doses. Our own practice is to give one dose of $\frac{1}{4}$ gr., seldom repeating it, and never giving more than $\frac{1}{2}$ gr. in all. We use it often as an adjunct, but never as the only treatment or the chief treatment. Elimination, which is our chief aim, is certainly defeated or made more difficult by giving this drug in large doses. Edgar says of its use: "I formerly used morphine freely in eclampsia, but have since abandoned its use almost entirely, as it apparently prolongs the post-eclamptic stupor and increases the tendency to death during coma by interfering with the eliminative process." In my opinion, neither the free use which he first made of it nor the neglect of it which he now admits are justified.

Veratrum Viride.—This has been called the American treatment of eclampsia. Probably no therapeutic measure recommended in the condition has warmer advocates, and, on the other hand, no measure seems to have more difficulty in winning a sure place in treatment of eclampsia. In this, as in the other measures used, its enthusiastic advocates use it too frequently, and its opponents do not use it at all. Both are wrong. Hirst gives it a place in what he calls his *scheme* for treatment. Davis, without especially endorsing it, states that it is an agent of great power and rapid action. Williams passes it by with a coldly indifferent statement that he has had no experience with it. Webster expresses what is in my opinion the exact indication when he states that "it should be used only when the patient is strong and the pulse is full and regular." I think he should have added the words "and fast." When the pulse is weak and irregular, the drug is contra-indicated. He administers it exactly as we have done for some

time now. A hypodermatic injection of 20 m., followed in thirty minutes by 10 m. more if necessary, or what probably states the case better, 10 m. every thirty minutes until the pulse is reduced to 70 or below.

This drug *will cause collapse and serious gastric disturbances* in all but the strong cases, and sometimes in these if full doses are given. This can fortunately usually be overcome by the use of alcoholic stimulants.

It has been our experience that veratrum viride is indicated in less than one-half of all cases, and we believe that the man who uses it in every case makes a serious mistake. It is our opinion also that a man who fails to give veratrum viride in selected cases loses an opportunity to use a very efficient aid. Besides directly controlling convulsions, it reduces temperature, relaxes the cervix, promotes diuresis and diaphoresis, so that it fulfills several of the important indications for treatment.

Chloral.—This remedy is in great favor, and is almost universally used. It is justly considered a very excellent remedy. So universal is its use as an adjunct to this treatment that I deem it unnecessary to discuss it, except to say that the authorities who are advising its use to the exclusion of other remedies are depending upon a remedy which will not fill the indications in the majority of cases. It is a splendid help, but should never be used as the chief or only treatment. Given in 30 grain doses and repeated as necessary it is a valuable aid. This seems to me to complete the list of drugs which are of any real value to fulfill the indication. I have given them in the order of their efficiency and their danger. My opinion is that the man who selects morphine or veratrum viride as his chief medicinal control agent, using the other two, chloroform and chloral, as needed, steers the safest course and gets the best results.

The second method of controlling convulsions is *by emptying the uterus*. It has been noted clinically that convulsions often cease after death of fœtus in utero or after the delivery of the child. Acting upon this suggestion, an early removal of the fœtus is indicated. When the os is undilated, rigid and unyielding, the same remarks apply here as in the pre-eclamptic state. Too much hurry means too much shock and too much laceration of cervix; when, however, the os is partially dilated, as it is apt to become soon after the beginning of convulsion because of the advent of labor, it is not usually difficult nor undesirable to hasten delivery. If the os is found

to be fully dilated, immediate delivery should be effected. The delivery of the child does not always terminate the convulsions, but it certainly does so in the majority of cases. Whether this be due to the emptying of the uterus alone or to the other measure adopted, or to both, which is more likely, cannot, of course, in most cases, be very easily determined.

Elimination.—While attempts at direct control of convulsions is being attempted by medicinal means and by the evacuation of the uterus, what is certainly as important as either—attempts to secure rapid elimination of poisonous elements—should be carried on. There is no definite order in which they should be done. They must as nearly as possible be carried on at the same time. At the head of the measures for elimination stands the hot pack or hot bath. I prefer the hot pack, simply because it is more easily given. Certainly no method of elimination gives better results or gives them as promptly. In addition to the control of extreme excitement which it gives, it produces a most profuse sweating, which can be continued until a large amount of excrementitious material has been removed. In my opinion few writers place enough stress upon the great importance of this procedure, many of them mentioning it among the useful methods and mildly praising it, but scarcely any of them insisting upon its vital importance. In every one of our recent cases, which mean all cases treated during the last six years, we have used this measure, and in no instance have we been disappointed in its use.

Injection of Salt Solution.—Combined with a hot pack should be the injection of normal salt solution. It has a most enthusiastic advocate in Jordine, who has been reporting in the British medical journals at short intervals for four years many cases. Most obstetric writers recommend it, and it seems to me it cannot be recommended too strongly. Our own practice is to inject from 300 to 500 c. c. under each breast and an equal amount into the bowel as soon after the first convulsion as possible, repeating the injection beneath the breasts. The blood vessels will take up in this manner an enormous quantity of fluid, and the hot pack will remove it again, thus practically keeping up a veritable washing of the blood. These two measures we use practically in every case. I wish to *insist upon the thorough administration of both of these measures*.

Venesection.—This procedure is useful in

some cases. It is unquestionably a reasonable one, about one pint of blood should be withdrawn if the patient does not improve after delivery. Most writers advise it when pulse is full and bounding, and this is the class of cases in which we have used it. Williams, however, recommends it in all cases where no improvement occurs soon after delivery, no matter what condition of the pulse. We have found it necessary only in a few cases.

The bowels should be moved as soon as possible by one or two drops of croton oil in olive oil on back of tongue, or salines if patient can swallow. Nitro-glycerine, as a diuretic and anti-eclamptic, is highly recommended, and is very useful. Edgar says that its value as a diuretic and anti-eclamptic can hardly be overestimated.

In the case in which there is collapse, alcoholic stimulants and digitalis should be used, and, though it would seem contraindicated, we have seen good results from strychnine.

Not only must the measures rehearsed be carried out, but they must be carried out intelligently. This is a disease which cannot be treated by routine methods. Chloroform, morphine, veratrum viride, chloral, venesection, hot pack, salt solution, purgation, nitro-glycerine, digitalis and alcoholic treatments and rapid emptying of the uterus, all are indicated in one case or another of eclampsia, but not all of them usually in the same case, and no one remedy will probably be satisfactory used alone. The measures for each case must be selected after the observation of the case by an intelligent physician. The man who uses an ordinary dose of morphine, purgatives, salt solution, and the hot pack, with the prompt evacuation of the uterus under proper limitations, will scarcely make a mistake in any case. The other remedies and measures usual, in my opinion, may be used on special indications, and this means a constant attention of the physician to the case until convulsions have certainly ceased. The man who sees a case of eclampsia early treats it intelligently, and remains with it, meeting conditions as they arise or anticipating them, saves nearly every case. Routine methods or methods of treatment by single drugs will fail in many cases. This was not intended as a scientific paper, but a plea for the more careful treatment of a condition which is too prevalent for the credit of the profession. The intention of the paper was to impress the following facts:

1st. That more care of the pregnant woman is not only desirable, but possible, even in the most sparsely settled communities.

2d. That toxæmia of pregnancy may usually be prevented.

3d. That severe toxæmia of pregnancy need not in the vast majority of cases result in eclampsia if properly treated.

4th. That immediate forcible dilatation of cervix and delivery of child in eclampsia occurring in a pregnant woman is not always justifiable.

5th. That the early delivery of child is desirable when it can be accomplished without serious injury to the mother.

6th. That the use of chloroform and morphine has probably been overdone.

7th. That the use of chloral, normal salt solution, hot pack, nitro-glycerine, and veratrum viride have probably been neglected or improperly administered.

8th. That, other things being equal, the constant and intelligent attention of the physician during the whole period of attack (convulsions) will result in the cure of a very large percentage of cases.

1204 Madison Ave.

The Salts of Uranium in Diabetes; With Some Remarks in Regard to Their Physiological Action.

By WILLIAM R. JONES, M. D., Ph. G., Richmond, Va.,
Professor of Medical Chemistry, University College of Medicine,
Richmond; Visiting Physician Virginia Hospital, etc.

It may be said of diabetes mellitus that there is no disease concerning which so much accurate knowledge has been gained, and at the same time so little is known as to the real cause. There is evidently much to be known about this disease, but what has been discovered to the present time is inadequate to the needs of our patients.

While the philosophers are sticking needles in the floor of the fourth ventricle, or removing the pancreas, or shocking the sympathetic nervous system, it is incumbent upon the practitioner of medicine to proceed along the line of clinical investigation and to depart from the usual methods in vogue if his judgment incline him to do so. In every case of incurable disease new remedies or methods should be tried, upon a rational basis, and if there be any excuse for empiricism we may find it here.

While I do not claim to have originated the idea of using uranium nitrate in the treatment of diabetes, I do claim the desire to bring this

agent prominently before the members of our profession, in order that its undoubted virtues may be thoroughly utilized. As in surgery, where many procedures formerly practiced fell into disuse and were forgotten to be revived successfully when applied in the light of modern asepticism, so in medicine, remedies have gained a broader field of usefulness and efficiency in the light of physiological chemistry. Chemistry promises for medicine what asepticism has secured to surgery.

Uranium belongs to the class of bodies which influence the form of energy manifested in light; its salts, while not luminous, are strongly fluorescent. This fact lends interest to the element from a therapeutic standpoint, in view of the various modern applications of radio-active substances. To what extent the fluorescent properties of uranium affect metabolism is not known at the present time, but the salt exercises a decided influence over the most important organ of the body, as may be easily observed by its administration for a short time. The action I refer to is a fine desquamation of the superficial layers of the epidermis, which naturally reminds one of the effect of the X-ray on the skin; but with uranium this action is of such moderate degree as to increase the functional activity of the organ, and it is general in character. The action of uranium upon the skin I have not seen referred to in the writings of any other observer, and I hope by further observation to determine more accurately its character. This much is clear: The desquamation takes place in the form of a fine white exfoliation, which extends over the whole body; the nutrition and functional activity of the skin is increased; a slight diaphoretic effect is produced. This action of uranium nitrate suggests its use in many forms of chronic skin disease, and it will probably occupy a higher position of usefulness than arsenic.

Uranium nitrate is a yellowish-green, crystalline solid, showing a high degree of fluorescence by reflected light; it is soluble in water, alcohol and glycerine, and is best given in solution in the dose of 1-6 to 1-2 grain four times a day. The salt has a powerfully astringent metallic taste, which is very persistent.

In every case of diabetes in which I have used uranium nitrate great improvement has resulted, and I report a case of complete recovery. Other cases now under treatment show a steady improvement. The salt evidently has a powerful effect upon metabolism, and there is a pro-

gressive improvement of the patient's general condition while under its administration. It gradually relieves the tormenting thirst, the extreme weakness, the excess of urinary secretion, and the attendant glycosuria. Dr. E. J. Moseley, who has used uranium nitrate at my suggestion, reports a case of diabetic ulceration, which, having resisted all other means of treatment, rapidly healed under the internal use of the salt. I append a report of the case which made a perfect recovery, and will report on the progress of the other cases at a later date.

It will be observed that the usual dietary restrictions are imposed:

Case I. Treatment began on May 29, 1900. Patient, white; male; age, 45 years; occupation, blacksmith. Examination of the patient showed all the symptoms of diabetes melitus. Progressive emaciation, progressive weakening, constant thirst, great nervousness, parched tongue and throat at night, excessive secretion of urine of high specific gravity, enormous appetite, etc.

Examination of the urine showed a specific gravity of 1.040, and sugar present to the amount of 2 per cent. No other morbid products were present in the urine.

The treatment in this case consisted in the usual dietetic measures, and, in addition, the use of a solution of uranium nitrate, given in the dose of one-fourth of a grain three times a day, and continued for about two months, with an occasional intermission of three days, in which time no medicine was given. The patient began to improve from the first, his strength and flesh increasing, his thirst and secretion of urine diminishing. The quantity of sugar in the urine progressively diminished until at the end of the two months it had entirely disappeared. About this time the restriction in diet was gradually removed, with no return of glycosuria, and eighteen months after (December 15, 1901), the patient presented every appearance of health, with no sugar in the urine.

211 West Grace St.

Sanmetto in Prostatitis, Urethritis, Cystitis.

—Dr. W. J. Chittock, Jackson, Mich., looks upon Sanmetto as a most valuable remedy in prostatitis, urethritis, cystitis, and, in fact, in all inflammatory conditions of the genito-urinary tract.

URINARY ANALYSIS IN CHRONIC BRIGHT'S DISEASE.*

By M. D. HOGG, JR., M. D., Richmond, Va.,

Professor of Pathology and Urology, University College of Medicine.

The part of the subject assigned me is somewhat limited as to diagnosis as well as indefinite as to subject. With these limitations, I will briefly speak of the chemic and microscopic appearances of the urine in the chronic parenchymatous and interstitial forms of nephritis, leaving out entirely such important clinical aids as anemia, dropsy, headache, insomnia, nausea, nephritic retinitis, arteritis, dyspnea and hypertrophy of the heart. While this renders the subject more unsatisfactory, still there are certain facts of value which enable us to come pretty close to fair conclusions as to the diagnosis in the pronounced and distinct forms.

The subject of urinary diagnosis merits our close attention, as nephritis is often accidentally disclosed by a life insurance examination, or from routine examination of the urine in conjunction with other diseases.

In the *chronic parenchymatous form with exudation of albumin in the urine*, the total amount of the 24-hour output varies much in the course of the disease. In rapidly running cases the quantity of urine is small—10 to 25 ounces; the amount of albumin large—a half to one ounce; the urea about normal—10 to 12 grains per ounce. If the disease runs a very chronic course, we find just the reverse to be true—namely, the quantity is increased 50 to 60 ounces; the specific gravity falls and the albumin and urea diminish. The color is a lemon or lark brown, and more or less cloudy. By the microscope, we find a rich field of observation, such as red and white blood cells, kidney epithelial cells often undergoing fatty degeneration. As to the casts, the epithelial are probably the most common, but also wide and narrow hyaline, dark, coarse and fine granular and fatty casts are usually abundant.

In the cirrhotic forms of nephritis, the diagnosis from urinary examination alone is, at times, very difficult, and it is a risky matter to make one from a single examination with no other data. As a rule, we find the specific gravity remaining persistently low, ranging from a 1,004 to 1,110; this continuance of low gravity is an important point. The quantity of urine is very much increased, varying from 70 to 200

ounces daily, more being passed at night than in the day. The color is pale and transparent, the reaction decidedly acid. The amount of albumin may be at times, for a short while, entirely absent, but traces can generally be detected (20 to 100 grains daily); the urea and phosphates are diminished. Microscopically, we find a few narrow hyaline, but seldom granular casts; crystals of uric acid and oxalate of lime and a few leucocytes are not uncommonly met with.

It is important to estimate the total quantity of urine passed in twenty-four hours. Frequently a patient with interstitial nephritis passes what is to him an unaccountable amount of water, his attention being first called to it by having to arise in the night once or oftener to pass it. Whether it is due to cirrhotic condition or excessive ingestion of fluid, is to be determined by measuring and ascertaining the amount of fluids drunk. The specific gravity also plays an important part, because from it one can roughly estimate the amount of urea. If, for instance, the specific gravity 1020 and the quantity 2 or 3 pints, the amount of urea is about normal, if the other solids are present in the right proportions. If the specific gravity is high and the quantity of urine small, we might conclude there was a deficiency of urea; but if the quantity of urine is large, an amount of urea sufficient to carry the patient over the danger line would be passed.

The most reliable test for albumin is the one with which the individual is most familiar. The old heat test is most to be depended upon, for if there is cloudiness on boiling, it is due to either albumin or phosphates, the latter of which is dissolved by acetic acid, albumin remaining unaffected. Its great disadvantage is the inability to detect minute amounts. All of the processes for estimating urea are troublesome. I have settled on the employment of Doremus' ureometer. Slight errors may creep in because of variations in temperature, etc., but they could hardly be more than a grain or two.

If there is no hurry to make the examination, pipe off the sediment to a test tube and add any aniline stain (I use fuchsin), which will color the casts particularly, and aid in their detection. This can also be done before centrifuging. To examine without the cover glass, take a small pipeful of urine and smear the small quantity up and down the slide. This gives a wider field. In examining for casts, the small, narrow, hyaline variety is often overlooked because the illumination is too brilliant. To correct

* Read before the Richmond Academy of Medicine and Surgery, September 22, 1903.

this, run the mirror down and close the diaphragm, thus using oblique illumination. Light does not interfere with the detection of granular and epithelial cast, epithelial cells and blood.

308 Grace Street, East.

THE TERMINAL SYMPTOMS OF CHRONIC BRIGHT'S DISEASE.*

By WILLIAM S. GORDON, M. D., Richmond, Va.,

Professor of Practice of Medicine, University College of Medicine.

In dealing with that portion of this evening's subject for discussion which has been assigned to me, I presume it is intended that the signs as well as the symptoms of chronic nephritis should be mentioned.

At the outset it must be borne in mind that there are cases in which the patient's first symptom, so far as his own recognition is concerned, may be a terminal one; as, for instance, when a severe nausea sets in, or where sudden cerebral pain precedes the rupture of a blood vessel, or an acute attack of mania. On the other hand, it should not be forgotten that symptoms usually regarded as terminal may be present yet disappear under appropriate treatment, and that the patient may live for years afterwards. A year or two ago I had under my care a young man who consulted me for supposed indigestion. His statement was that for several weeks—possibly months—he had been having obstinate attacks of nausea and vomiting, for which his physician had prescribed whiskey amongst other things, and that after the emptying of his stomach and abstinence from food for a day or two he felt as well as usual. The symptoms and even the signs in this case were not sufficiently marked to cause suspicion as to the real nature of the malady, while the pallor, which was noticeable, could have been reasonably attributed to nausea. A urinary analysis proved the patient to be in the last stages of nephritis, and after a succession of almost intractable attacks of epistaxis, convulsions set in, and death occurred several weeks later. Opposed to this case I treated some years ago a lady who, I believe, is still alive, yet who was at one time insane from the uræmia of chronic interstitial nephritis.

As a rule, however, the terminal symptoms

of the disease are unmistakable and easily recognized by the careful and close observer. The failure of the patient to refer any sensations to the kidney itself is significant. In striking contrast with this are the sensations of pain, aching, tightness, and fulness in the kidney, which is complained of in acute cases. To this truth there are exceptions.

The real terminal symptoms are largely the outcome of changes in the blood, heart and vessels. The struggle is between a crippled kidney unable to excrete the normal amount of urea and the organs and tissues whose tolerance of the poison is remarkable. When this tolerance, however, ceases, and the blood becomes vitiated, and the circulatory organs give away, then it is that the final manifestations of Bright's disease occur. Prominent among these are the direct effects of uræmia upon the nervous centres, such as nausea, vomiting, stupor, coma, convulsions, mania, retinitis, and paralysis, independent of rupture of the blood vessels. When hydræmia occurs, œdema or anasarca is present. Dropsy, anuria, dilatation of the heart, loss of pulse tension, and a marked amount of albumin may be characteristic features of the last stages of interstitial nephritis, while profound anæmia, dropsy of the serous cavities, extreme debility, and cardiac failure betoken an early fatal termination of the parenchymatous form.

So long as cardiac hypertrophy is maintained marked symptoms referable to the heart and blood vessels may be wanting, but when dyspnoea occurs, we can justly conclude that the end is near, for this sign is the result of dilatation of the heart, pulmonary dropsy, or poisoning of the respiratory centre. In this connection I would call attention to the significance of Cheyne-Stokes respiration, which I regard as an almost certain indication of approaching death. In a recent instructive case to which I was called in consultation, I found an enlarged liver, a diseased heart, hemiplegia of the left side, and Cheyne-Stokes respiration. The latter sign, so often present in advanced cases of nephritis, led me to suspect renal disease as the primary cause of all the conditions in this case, and on my return from the country a urinary examination confirmed this view and the gloomy prognosis made. The patient's condition was serious, of course, from any standpoint, but when the respiratory centre, endowed as it is with so much vitality, capable of automatic action and long-suffering, gave way, the outlook was practically hopeless.

* Read before the Richmond Academy of Medicine and Surgery, September 22, 1903.

Dilatation of the heart is a sign to which due importance ought to be attached. Not only is it liable to cause sudden death, but reacting upon the kidney produces passive congestion of that organ added to the pre-existing disease. For this reason a dilated heart can correctly be regarded one of the terminal signs.

The patient's expression in the last stages of nephritis is often noticeable, and when that peculiar, far-off, anxious, hopeless, hunted look comes into the sunken eye, when the cheeks assume the characteristic pallid appearance and become hollow, and when the fatty tissue on the back of the neck is absorbed, we have signs which point unerringly to impending dissolution.

6 Grace Street, East.

Correspondence.

Mr. Editor,—In the editorial of the *Medical Semi-Monthly* of September 25th occurs the following language, which I conceive does me injustice, though I do not believe it is intentional. It is not consistent with the facts in the case:

"The meeting began wrong by the full reading of some papers when the authors were not present to support their theses. Time limit of twenty minutes for each speaker, or reader of a paper, and five minutes for discussion by any one member was not tightly drawn—one speaker, indeed, being allowed about an hour and a half consecutively on a non-scientific subject; and the discussions by various fellows which followed consumed at least two hours and a half more of time—with the result of the postponement of further consideration of the matter until the next annual session. It is the only instance in the over thirty years' history of the Society that excessive time during the scientific progress of a session has been consumed by any speakers in non-scientific discussion. By the non-observance of time limit for each speaker, the authors of a number of papers with attractive titles for scientific consideration were cut out of the opportunity of presenting them, except by title. Thus while the few papers read and discussed were of great interest and value, the session was disappointing, so far as the carrying out of the full scientific program announced was concerned."

The full reading of the paper mentioned—only one was so read—was against the ruling of

the chair, by vote of the Society. The time limit was *rigidly enforced* in every instance, except that of the speaker referred to as a non-scientific subject. You do not state that the non-scientific subject was the most vital one of a complete reorganization of the Society; that the speaker was the *invited guest of the Society*, as well as the *organizer of the American Medical Association*, whose duty it was to give the *necessary information* in the important matter pending, and it was not possible for him to do so in a shorter time. I distinctly stated that I would not adhere to the rule limiting discussion, because it would defeat the very object most desired. No one regretted more than I did that the scientific papers were not read, but there has never been a question before the Society of more vital importance. It went over till next year, as a concession to those opposed to the change, because they claimed not to have had the opportunity to examine it. Respectfully yours,

J. N. UPSHUR,

Late President of the Medical Society of Va.

Drainage Tube Passed from Cyst, Through Bowel, Two and Half Months After Operation—Nature of Tumor Opened Not Determined.

Mr. Editor,—I was called, March 10th, to Miss S. N., age 35, who had been confined to her bed since December 26th. Off and on she had been under the care of three physicians since January 1st. The two last attendants had given her case up as hopeless the day before I was summoned.

On first seeing the patient, I found the following conditions: Pulse 120, temperature 101°F., nausea, dilated pupils, pain in abdomen, and a large tumor in the hypogastrium, which had been thought to be an ovarian cyst by the two last physicians. Not being able to diagnose the condition satisfactorily, I gave quarter grain morphia sulphate and thirtieth grain strychnia sulphate hypodermically, and directed that she should take a dessertspoonful of whiskey toddy every two hours until the next morning. I returned home, expecting to hear of her death at any time. But early on the following morning a messenger came for me, saying that the patient felt a good deal stronger.

Preparing myself for an exploratory operation, on arriving with my assistant, I found she had reacted to some extent. Pulse 100, temperature 101°F., tumor well defined in right

hypogastric region. An exploring needle passed into the tumor withdrew a real dark-colored fluid. My assistant gave chloroform, and I gave hypodermically another one-thirtieth grain of strychnia sulphate, while the site of operation was scrubbed with strong mercuric bichloride solution. Incision of $2\frac{1}{2}$ inches was made about three and a half inches to the right of the umbilicus, extending downward and inward. After exposing the peritoneum, I recognized the well marked wall of a tumor, which was punctured with a small bistoury. Fluid spurted out, which flowed freely until something like a half gallon escaped—the last of which was very much like bile in color. After washing out the cavity of the sac with carbolic acid solution, a soft rubber drainage tube was put in, and the wound dressed with acetanilid gauze and absorbent cotton, held in place by a rubber bandage. She was put in bed, and reacted nicely.

Next day, I redressed the wound, after washing with carbolated solution. By a typical bile discharge kept up for five or six days afterwards. Then the patient seemed well enough for her mother to wash out the cavity and dress the wound as she had seen me do each day previous.

The patient did very nicely up to the tenth day, when she got up at night for some purpose. On returning to bed, she noticed that the drainage tube was lost. The next day I washed and dressed the wound myself, which seemed to be doing nicely. There was very little drainage, no pain, no fever, nor any untoward sign or symptom. Hence I felt no uneasiness about the case, and left the wound open to heal by granulation, which healed in due course of time—in about fifteen days; and about the twentieth day after operation the patient was going about, and soon recovered her health. She was more fleshy than she had been before in years.

On June 8th, while her bowels were acting, she noticed that some peculiar object was passing, and on examination found the long lost drainage tube, which was inserted into the wound on March 20th. But during the entire interim it had never given her a particle of pain or trouble of any kind. How did this drainage tube pass through the walls of the tumor and get into the bowel, without once developing a sign or symptom? Furthermore, what kind of cyst or tumor was it with which I was dealing? I would like to hear from some one having had a like experience.

J. C. LUKE, M. D.

Ocala, Ga., Sept. 15, 1903.

Analyses, Selections, Etc.

Atrophic Nasal Catarrh.

In a communication from Dr. L. R. McCready, Grand Rapids, Mich., he says that in the treatment of nasal diseases there is a class of cases that receives but little attention either from the practitioner or the authorities—i. e., atrophic nasal catarrh. The characteristic odor and complications following should lead us to exert every effort to its amelioration.

There are two distinct forms of the atrophic process that we have to deal with, *fetid rhinitis* and *dry anterior rhinitis*. In dry anterior rhinitis the posterior walls of the pharynx are extremely dry, and in places shiny, and lack the elevations of the follicles and glands characteristic of other forms of catarrh. The atrophy of the mucous membrane and of the underlying structures, formation of fetid, tenacious secretions, the attacking of the serous glands, and reduction of their secretions to a minimum become apparent. The secretions of the mucous glands cling to the surface of the nose. The extension of the atrophy into the olfactory region attacks the terminal fibers of the olfactory nerves, causing loss of smell.

Ulcerations are rarely found, but when they do occur, are usually on the cartilaginous septum. Habitual nose bleed can in many cases be traced to this affection.

The treatment of atrophic rhinitis consists of the removal of the secretion and disinfection of the nasal passages, together with the stimulation of the serous glands to normal action.

In the writer's hands a routine treatment covering the ordinary case presented for treatment is as follows: After a thorough examination of the affected field, the writer irrigates the anterior nasal passages with *glyco-thymoline*, one part, to water three parts, at a temperature of normal blood heat, the K. & O. nasal douche or a compressed air atomizer being employed. Then by aid of a post-nasal syringe, about four ounces of the solution are used through the post-nasal space, entering through the mouth.

Ichthyol-glycerine, in the proportion of one ounce of ichthyol to 8 ounces of glycerine, is now painted over the membranes by aid of a pledget of cotton and allowed to absorb. A bland unirritating oil is now sprayed into the nares thoroughly; the most satisfactory protective oil being composed of a petroleum base with eucalyptus, menthol and camphor.

The patient is given a supply of glyco-thymoline and instructed to clear the nares with it by aid of a Bermingham or Keck douche twice daily.

The office treatment should consist of daily, or every second day, applications of the indicated remedies. Insufflation of mild powders have been recommended, but the writer finds them a dismal failure.

Alterative treatment, tonics, etc., together with hygienic precautions, are recommended. Calcium sulphide in sufficient quantities to produce saturation has proved of marked benefit. Exposure to dust, etc., is to be avoided. Tobacco is contraindicated in all cases.

Is Registration and Disinfection a Successful Method of Combatting Pulmonary Consumption?

Dr. Thomas J. Mays, Philadelphia, Pa., stated in a paper read before the session of the Medical Society of the State of Pennsylvania, held at York, September 23-25, 1903, that in writing a recent paper on the death rate of acute pneumonia he was surprised to find that instead of decreasing, consumption has increased in most of our large cities during the last five years. This has led to an inquiry whether registration and disinfection of consumption in vogue in many of our cities are as efficient in "wiping out" this disease as we have been led to believe. In order to throw light upon this question he collected data showing the death rate of consumption and pneumonia in twenty large cities and two prominent States—viz.: Philadelphia, New York, Chicago, Boston, St. Louis, Buffalo, Washington, D. C., New Orleans, Richmond, Baltimore, Louisville, Reading, Milwaukee, Hartford, New Haven, Cleveland, Haverhill, Worcester, Cincinnati, Indianapolis and New Jersey and Rhode Island, representing a total of nearly thirteen million inhabitants, or about one-sixth of the entire population of the United States. These statistics are arranged in twenty-five charts, and in many instances cover a period of thirty years.

One of the striking characteristics of these charts is that the consumption tracing pursues a general descending course, while that of pneumonia rises in most instances. Another one is that during the last five years consumption increased in Philadelphia, Boston, St. Louis, Buffalo, Washington, Rhode Island, New Jersey, New Orleans, Richmond, Baltimore, Louisville, Reading, Milwaukee, New Haven, Cincinnati

and Indianapolis, and decreased during the same time in New York, Chicago, Hartford, Cleveland, Haverhill and Worcester. The total increase being 184.71 per cent., and the total decrease 38.86 per cent., leaving a net increase of 145.87 per cent. in these localities.

On examination of the charts it will be found that with perhaps one or two exceptions they may be divided into two classes—viz: (1) Those in which the phthisis and pneumonia tracings touch or cross each other during the last ten years, as is the case with Philadelphia, New York, Chicago, Boston, Buffalo, Baltimore, Hartford, New Haven, Cleveland, Worcester and New Jersey; and (2) those in which the same tracings remain apart a good distance, the latter below the former, as is true of St. Louis, District of Columbia, New Orleans, Richmond, Reading, Milwaukee, Haverhill, Indianapolis and Rhode Island.

Now, on investigation, it turns out that in all the localities of the first class, registration and disinfection of consumption are enforced, or these subjects are or have been largely agitated; while in the localities of the second class these measures receive no consideration whatever.

If we compare the death rate of phthisis and pneumonia for the whole period between the first class or prevention localities, and the second class, or non-prevention localities, it will be seen that the decrease of phthisis is about 1,000 per cent. greater in the prevention than it is in the non-prevention localities; while, on the contrary, pneumonia increased over 600 per cent. in the former over the latter localities.

Now, what is the interpretation of these figures? How can the differences in the death rate of pneumonia be accounted for between those localities which practice prevention and those which do not? Is this mere chance, or is it coincidence, or a connection between cause and effect? Without inquiring into the specific nature of this relationship, if any exists, it is enough to know that the pronounced decrease of phthisis in the prevention localities is largely supplemented by the excessive rise in the pneumonia rate in the same. Indeed, it seems as if from the early nineties until the end of the century phthisis and pneumonia lines had become confounded in many of the prevention localities, and as if a certain large proportion of deaths had been deducted from the former and bodily transferred to the latter.

It might be asserted that the greater decrease of phthisis in the prevention over the non-preven-

tion localities during the last ten years is direct proof of the efficacy of disinfection measures. Standing by itself it might be regarded as such, but when taken in connection in the first place with the simultaneous enormous rise of the pneumonia column in the same localities, and in the second place with the fact that no rise, but even a decline occurred in the pneumonia rate of the non-prevention localities, it will be seen that its force as such is greatly impaired. It is perfectly clear that the decrease of phthisis is intimately interlinked with the increase of pneumonia, and it is very probable that both of these phenomena are dependent on the influence of registration and disinfection, because in localities like New York and Boston, in which these measures have been carried out the most effectually and for the longest periods, the death rate of pneumonia attains by far the highest average during the last ten years.

Now, when we reflect that all the prevention localities, with possibly one exception, may be recognized and separated by the ear mark of a high pneumonia death rate; that the decrease of phthisis in the same localities is largely supplemented by a marked rise in the pneumonia rate during the same time; and that in eight out of the thirteen prevention localities—viz.: Philadelphia, Boston, Buffalo, New Jersey, Baltimore, Louisville, New Haven and Cincinnati, there has been a total increase of 88 per cent. of phthisis during the last five years, it is sufficient proof to show that registration and disinfection have not thus far shown themselves a success in the "wiping out" process of consumption.

The article is published in full in the *New York Medical Journal*, September 26, 1903.

Dietetic Treatment of Chronic Nephritis.

This was the title of a paper by Dr. James M. Anders, Professor of the Practice of Medicine and Clinical Medicine in the Medico-Chirurgical College of Philadelphia, read before the Medical Society of the State of Pennsylvania, at York, September 22-24, 1903. The full paper as it will appear in *American Medicine*, is worthy of attentive study, confirming experiences from time to time recorded.

There is no disease in which a proper management of the diet is of greater importance to the patient than chronic nephritis. The dietary that fails to meet the requirements of nutrition, plus the loss of albumen, which takes place through the kidneys, amounting to 1, 2 or even 3 grams daily, is inadequate and certain to be

followed by evidences of malnutrition. Efforts to lessen the degree of albuminuria at the expense of the quality of the blood and general nutrition are not so much blessings as evils. By means of a proper diet we may postpone, if not at times prevent, the later development of true contracted kidney. The diet of a nephritic patient must be flexible and adaptable to the various changing conditions of the patient as well as the seasons. Individual cases present certain peculiarities; hence it is not possible to formulate a dietary that would be suitable for all classes, and the indications also vary with the stage of the morbid process. For example: In the presence of marked gastric irritability, and during acute exacerbations, an exclusive milk diet may be necessary, although ordinarily it is not well to restrict the food to milk alone. Milk does not furnish sufficient either of iron or carbohydrates to sustain the system. In his experience the long continued restriction of the diet to milk alone has repeatedly produced an undue general weakness. The ingestion of excessive quantities of milk or water or both tend to augment the labor of the heart. Von Noorden has pointed out that inunction of the vascular system with water does correspondingly increase the work of the heart, which thus sustains permanent damage. In advanced cases of granular kidney, active heart disease is a constant concomitant, and it calls for careful management, with a view to preserving the integrity of the cardio-vascular system.

Cases in which the appetite and digestion are still good require a suitable mixed dietary. It has been shown experimentally that on a full meat diet the amount of albumen secreted is about doubled. It is clear, therefore, that the larger the quantity of proteid foods consumed, beyond certain limits, the greater will be the accumulation of urea, which is most irritating to the tissues in the circulation. Certain urinary salts derived principally from meats, as chlorides, carbonates and phosphates, but especially the chlorides, act as irritants to the kidneys. Clinicians manifest a general tendency to supply the system with an insufficient amount of albuminous aliment in view of the constant systemic drain, and as proteids form the essential basis of all tissues, perfect metabolism cannot be accomplished without a certain definite quantity of nitrogen.

Dr. Anders is of the opinion that red meats show as good nitrogen excretion as white meats.

Fats are allowable, hence the use of skimmed

milk instead of whole milk is not advised, and butter is allowed also except in cases of obesity. The merits of each case should be considered from two points of views—namely, what quality and quantity of aliment the patient should take; and secondly, what he can take.

In general, whole milk should make up a considerable portion of the diet; the meats should be somewhat restricted, while fruits, green vegetables and rice may be given rather freely. He emphasized the fact that the normal daily physiological quantity of food is required in chronic nephritis, and that is practically as follows: 110 to 130 grams of albumen, 350 to 400 grams of carbo-hydrates, 75 to 110 grams of fat, 2,500 to 3,000 grams of water, and 18 to 30 grams of inorganic salts. Expressed in different terms, the body needs from 2,000 to 2,400 calories per diem during rest, and 2,400 to 3,000 calories during hard labor. This contains about 600 calories of proteids, 1,200 calories of carbo-hydrates, 600 calories of fat. It may prove helpful to remember that 100 grams of meat represent 213 calories, and one glass of milk equals 128 calories, also that an ordinary slice of bread (30 grams) equals 64 calories, while 18 grams of butter equals 8 calories. It is often impossible to persuade patients suffering from chronic nephritis to adhere rigidly to a prescribed diet, and thus it often happens that milk is not well supported, even refused. In such a case the solid proteids, or fruits and vegetables, must be correspondingly increased. It must be borne in mind that the percentage of nitrogen in milk is only one-quarter as great as in meats. Vegetables, however, also contain nitrogen; hence we can supply this element by drawing more largely than is usual on the vegetable kingdom.

As regards the manner of feeding, it was advised to take simple meals at three hour intervals.

The extent to which a given diet contributes to bodily nutrition and development must be carefully estimated. This is accomplished by noting the effect upon the degree of the albuminuria and also upon the kidney elimination of the normal metabolic products, as urea, creatin, hippuric acid, phosphates, inorganic sulphates, chlorides, carbonates, uric acid, xanthin bases, etc. The majority of these substances are imperfectly excreted in marked renal lesions, especially if the amount of food ingested be excessive.

Von Noorden has shown that chemical substances cannot be recommended as a test of the

secretory function of the kidney. The chemical study of the products of elimination in granular kidney is too difficult for ordinary clinical purposes. Von Noorden has found it practicable to fix standard values expressed in bulk or weight, calculating on the basis of 70 kilograms body weight, that from 13 to 16 grams of nitrogen are ingested daily by the nephritic patient who enjoys good general health. Furthermore, he found that when the ingestion of albumen was increased so that considerable more than 15 grams of nitrogen daily had to be excreted by the kidneys, the elimination became irregular.

Cryoscopy serves to indicate the presence and degree of renal insufficiency. The results are especially favorable when urine is obtained by catheterization of the ureters. In all cases in which a catheter specimen is not obtainable, a cryoscopic examination of the blood is to be given the preference, because the freezing point of normal human blood is practically constant. Finally, Dr. Anders emphasized the importance of keeping a careful record of the bodily weight of the patient at intervals, so that the diet may be increased in case the general nutrition declines; he also urged the importance of systematic blood examinations as a means of ascertaining the state of the general nutritive processes. Progressive symptomatic anemia is often found in cases in which the physical powers are declining, and is due to subnutrition from insufficient alimentation.

Salicylate of Soda for Exophthalmic Goitre.

According to *Medical Press*, August 19, 1903, the benefit derived from the administration of soda salicylate in Basedow's malady is being continually corroborated by practitioners in France. M. Chibiel, who recommended this treatment, lately reported four cases which proved very amenable to this drug. He prescribed one drachm daily in Vichy water, and noted very rapid improvement. M. Babinsky communicated to the Societe de Neurologie, at Paris, three cases, of which two were accompanied with intense tachycardia—120 to 140 pulsations a minute. After a few months of salicylate treatment, the pulsations fell to 80 a minute, and the trembling disappeared. In the third case, where the only symptom was goitre, the gland entirely disappeared at the end of three months. No other treatment was employed than that above outlined in any of the three cases.

New Apparatus for Electro-Therapeutic Work.

Dr. F. G. DuBose, Selma, Ala., presented a paper to the American Electro-Therapeutic Association, during its session held at Atlantic City, N. J., September 23, 1903, in which he describes a new apparatus, and points out the values of the currents developed thereby. These currents are like the static in that they are of great voltage and low ampereage. This is accomplished by changing the commercial lighting current by a series of up-step transformers—using a Rhumkorf coil, Leyden jar condensers, and a large solenoid as a resonator, or amplifier. From the street main of low potential, the group begins with the interruptor, then the high potential transformer or coil; from this coil the current is carried to the first part of the “high frequency” apparatus proper, which is, in this case, the internal layers of the Leyden jars, two in number, which are discharged across a spark gap in a reciprocating manner from one to the other. This forms an alternating oscillating current of a fabulous rate of frequency, alternating in sign and opposite in polarity. This point terminates the internal circuit of high frequency and high potential. From the outer metallic coating of the Leyden jars these currents are carried to the resonator, which amplifies the current. From the top of the resonator long sinuous effluves, leaping to and from an object brought near to them, are seen. Both mono- and bi-polar currents are used, one from the top of the resonator for effluing, ignition of vacuum tube electrodes, electric roller, massage electrode, and local applications generally. From the two terminals of the resonator the currents are taken for auto-conduction and auto-condensation, and for direct applications of a general systemic charge, the two former are induction charges of the human body, which are said to excite the latent electrical currents in the body into action. By these means as much as 400 milliamperes can be sent through the human body without discomfort, and without any shocks whatsoever.

The effects on the human organism are: Increase of output of urea, increase of perspiration, increase of pulmonary exhalations or combustions, a fall of arterial tension, sometimes an acceleration of the heart beat, and elevation of the temperature. Locally, there is first redness of the skin, and if effluing is prolonged, vesication results. There is analgesia at the point of exit and entry of the current. The virulence of blue pus is attenuated, and the bacillus dies

after about thirty minutes' application or exposure. It is essentially the current that acts on the nutritive processes and cell life. Sedation, elimination, and tonic action are its principal effects.

It is used in the treatment of the following general diseases: Gout, diabetes, chronic rheumatism, obesity, hysteria, anæmia and chlorosis, neurasthenia, pulmonary tuberculosis, dyspepsia, enteroptosis, atonic dilation of stomach. The local diseases treated by this current are: Lupus, chronic eczema, pityriasis, psoriasis, sciatica, headaches, neuralgias, warts, hemorrhoids, prolapse of rectum, pruritus, varicose veins, varicose and other ulcers, malignant growths.

The most approved apparatus is manufactured by Scheidel, of Chicago; Dean, of London, and Gaiffe, of Paris.

Aneurism of the Left Subclavian Treated by Wiring and Electrolysis.

Dr. Judson Daland, of Philadelphia, read a paper by this title before the 53d annual session of the Medical Society of the State of Pennsylvania, held at York, September 22-24, 1903. The patient was a man aged 52, a laborer by occupation. Two years ago he first noticed a tenderness in the left side of the neck and pain in the left shoulder and arm. Seven days later he noticed a pulsating mass in the left side of the neck, which gradually increased in size until at the time of his examination, April 24, 1903, it was as large as a cannon ball. The examination of the heart, lungs, liver, spleen and urine gave negative results. The diagnosis of aneurism was based upon:

1. The presence of an expansile, pulsating tumor.
2. Thrill.
3. Pain in the left shoulder and arm, due to pressure upon the brachial plexus.
4. Contracted left pupil and pseudo-ptosis, due to pressure upon the cervical sympathetic.
5. Facial paralysis, due to pressure upon the branches of the facial nerve.
6. Dilated and tortuous superficial veins over the left side of the neck, shoulder and chest, due to pressure upon the left innominate and jugular veins.
7. Dyspnoea, partly due to pressure upon the trachea.
8. Delayed radial pulse diminished in volume, due to the obstruction offered by the aneurism.

Twenty feet of gold wire was introduced in the sac through a hollow needle and a galvanic current gradually increasing from one to eighty m. a. was employed for about 110 minutes. The pulsation and size of the tumor temporarily decreased and afterwards increased, and death occurred on the 20th day after operation, hastened by the formation of a thrombus in the left common carotid artery produced by the pressure of the aneurism.

The necropsy showed a cocoanut-shaped aneurism involving the left sub-clavian artery from its origin to the axillary artery. Its cavity was occupied in large part by a clot in varying stages of organization, through which the wire was well distributed.

The following conclusions are drawn from the study of the case:

1. That the cause of the arterial-sclerosis was alcoholism, rheumatism and probably syphilis.

2. That the immediate exciting cause was over-muscular exertion.

3. That proximal deligation was impossible.

4. That medical treatment was ineffectual, and the patient was in a hopeless condition.

5. That the operation was performed with the faint hope of relieving the intense, continuous pain.

6. That the wiring and electrolysis successfully produced the desired coagulability of the blood within the sac.

7. That the blood pressure in the left brachial artery was decidedly increased by the partial closure of the aneurismal sac by the clot, and that this increase continued for more than nine hours after the operation.

8. That the successful production of a clot within the cavity of the aneurism did not prevent the sac from continuing to enlarge.

9. That death was probably hastened a few weeks by the operation.

10. That the cause of death was exhaustion, due to long-continued pain and hastened by the formation of a thrombus in the left carotid artery, from pressure by the aneurism.

11. That this operation is worthy of trial when medical treatment fails, and that the percentage of success will be greatly increased if the operation be not performed as a dernier resort.

12. That the local increase of blood pressure after the operation indicates the need for measures producing hypo-tension, such as absolute rest, low diet, diminished quantity of liquid, avoidance of excitement, venesection, nitro-glycerine or the nitrates.

13. That gelatin should be regularly employed to increase the coagulability of the blood.

14. That these measures should precede the operation by at least a week, and continue after the operation for not less than two weeks.

The Present Status of X-Ray Therapy in the Management of Cancer.

In a paper by Clarence Edward Skinner, M. D., LL. D., New Haven, Conn., read at the annual meeting of the American Electro-Therapeutic Association, held at Atlantic City, N. J., September 22d, 23d, and 24th, the speaker stated that it is impossible at the present time to form a reliable opinion as to the limitations of X-ray therapy in the management of cancer, and discussed at some length the reasons therefor. Prominent among these are that there have been many X-ray machines on the market, which are incapable of doing good therapeutic work; that the physicians who are using the agent to-day are most of them novices in the use of the X-ray—especially in its therapeutical applicability; and that many clinicians are reporting results obtained under the use of the ray who are depending entirely upon radiographers and sometimes nurses for the application of the ray. Dr. Skinner considers that in order to get good results from X-ray therapy, the operator must be thoroughly familiar with the agent in its therapeutical relations. He does not consider that a good radiographer is necessarily a good radiotherapist.

He divides cases of cancer with reference to the influence of X-ray therapy into three primary groups: (1) Those affecting the layers of the true skin only; (2) those affecting the deeper soft structures either with or without involvement of the integument; and (3) those affecting the bones.

In the first group he believes the X-ray is the very best treatment now available, and bases his opinion upon the following facts: *First*, the total number of cases treated, both operable and inoperable—and the number of those now available for statistical purposes runs up into the hundreds—as large a proportion has been cured as has ever been claimed as the result of any other management. Some writers claim, and apparently with justice, that the proportion of cures is larger.

Second, of the cases cured, a much smaller proportion has shown evidences of recurrence within a given period of time following the cure, as compared with the recurrences observed within a like period of time following the cure of

cases by the knife or caustics, and the vast majority of recurrent cases have readily responded to a second application of the rays.

Third, the cosmetic effect obtaining after the X-ray cure of cutaneous cancer is incomparably superior to that obtainable by a cutting operation, or by the application of escharotic pastes.

Fourth, the application of the X-ray is not only usually quite devoid of painful consequences, but is frequently capable of entirely relieving the pain, which is already present as the direct result of the cancerous process.

In the second group of cases he favors initiatory total extirpation, if possible, to be followed at once with a course of X-ray applications; but when the malignant disease affects the lip, ear or nose it is justifiable to use the X-ray alone if circumstances should seem to make such a course desirable, standing ready to operate at once if the disease shows any tendency toward spreading. He considers this course justifiable because a number of well authenticated cases of cancer in these regions have been cured by the X-ray alone.

In intra-abdominal cases, the percentage which has shown material benefit has been so small that extirpation, if possible, should be the first step, to be followed by a long course of X-ray treatments. No evidence as to the value of the combined methods is available, as the cases which have come under treatment by the X-rays have almost all been in such an advanced stage that total operative removal has been impossible. The fact that a few cases have been cured under such discouraging conditions, however, affords ground for the belief that early operation combined with the applications of the X-ray will prove to be a beneficial management in the future.

With cases in the third group, the speaker favors total extirpation, to be followed by X-ray applications, and says he does not know of a case involving bony tissue that has been cured by the X-ray alone, and that he knows of but one operator who claims such a result, and this operator only claims one case.

Dr. Skinner does not believe that X-ray applications induce or hasten metastasis, although he admits that the opinions of some of those who do are justified by their individual experiences.

He favors a tube producing rays of high penetration for deeply located growths, and rays of either high or low penetration for superficial growths.

Instances are referred to where epitheliomatous degeneration of healthy tissues has followed long-continued frequently repeated exposures to the rays, and two cases of severe X-ray necrosis are cited in patients who had been thoroughly "tanned" by the treatment, thereby exploding the idea that a patient who "tans" well by the rays will not be in danger of a burn.

The paper concludes with an expression of opinion that "the therapeutic application of the X-ray should be entrusted only to the hands of operators who are skilled and experienced in this particular line of work, as the difference between efficient and faulty technique will frequently constitute the difference between clinical success and failure, as well as between safety and danger to the patient."

Fatal Case of Chorea, Complicated by Endocarditis, Pericarditis and Nephritis.

Dr. Augustus A. Eshner, Philadelphia, reported this case during the session of the Medical Society of the State of Pennsylvania, at York, September 23, 1903: The patient was a girl 10 years old, with a family history of rheumatism and chorea, who presented choreic movements in the upper and in one lower extremity, and later in the face, together with pain at one wrist joint, as well as a blowing, systolic murmur at the apex of the heart. The temperature was elevated, the pulse accelerated, and pallor was marked. Under observation, the urine became turbid and high colored, and examination disclosed the presence of albumin and tube casts, later a to and fro friction murmur became audible over the body of the heart and at its base. Improvement in the movements took place under treatment, but a violent exacerbation succeeded upon a fright, and symptoms suggestive of uremia appeared. Improvement again ensued, but in the eighth week death ensued, apparently as a result of heart failure, due to myocarditis.

New Orleans Polyclinic.—Seventeenth annual session opens November 2, 1903, and closes May 28, 1904. Physicians will find the Polyclinic an excellent means for posting themselves upon modern progress in all branches of medicine and surgery. The specialties are fully taught, including laboratory work. For further information, address, New Orleans Polyclinic, Post-office Box 797, New Orleans, La.

Left-Sided Appendicitis.

During the session of the Medical Society of the State of Pennsylvania, held at York, September 22-24, 1903, Dr. Edmund W. Holmes, Philadelphia, read a paper with the above title, of which the following *resume* is given: The symptoms of appendicitis are to such a degree dependent upon the location of the appendix that the following reports of autopsies are of practical interest:

1. *Autopsy*.—The ileum ends at the ileo-cecal valve on the left side of the fourth lumbar vertebra. The appendix is attached just below, and points upwards and backwards towards the liver. Infection in this case would have been indicated by an area of soreness not larger than the tip of the forefinger just below and to the left of the umbilicus.

2. *Autopsy*.—The appendix is a little to the left of the median line, entering the cecum as it rests upon the promintory of the secrum—the base being on a line between the anterior superior spinous processes of the ilium. The small circle of tenderness in this case would therefore have been on the left side, in the true pelvis an inch below the promintory of the sacrum.

While not going into the reflex symptomatology, in the opinion of the author of the paper, appendicitis is usually the result of infection travelling downwards from the cecum. The base is therefore more commonly affected. Still, it is possible—especially in the chronic recurrent varieties—for the apex to be painfully inflamed, the base at the time being comparatively healthy, in which case the length of the appendix, as well as its position, will influence the symptomatology. Thus a very long appendix may stretch over to the left side, and simulate a left ovarian or left pelvic abscess, or may counterfeit post sigmoidal or other inflammatory disorder of that region.

Book Notices.

Medical Epitome Series. Edited by V. C. PEDERSEN, A. M., M. D., Instructor in Surgery and Assistant Anesthetist at New York Polyclinic Medical School and Hospital, etc. *Medical Jurisprudence.* By EDWIN WELLES DWIGHT, M. D., Instructor in Legal Medicine, Harvard University. Lea Brothers & Co., Philadelphia and New York. 1903. Cloth. 12mo. Pp. 249. Price, \$1 net.

Like the other volumes of this *Medical Epitome Series*, a good author has been selected,

who treats the subject in hand in such manner as to make it a valuable book for student and practitioner. It is, of course, but a compendium of important facts in connection with legal medicine, but it includes such information as is essential to every practicing physician. Brief in its review of a subject, it yet covers nearly every matter referred to in the larger text books. Like others of the series, review questions are appended to nearly all chapters. It has a good index, which greatly facilitates reference to a point.

Dictionary of Medical Science. By ROBLEY DUNGLISON, M. D., LL. D., Late Professor of Institutes of Medicine and Medical Jurisprudence, Jefferson Medical College. *Twenty-Third Edition. Thoroughly Revised, with the Pronunciation, Accentuation and Derivation of the Terms.* By THOMAS L. STEDMAN, A. M., M. D., Fellow of New York Academy of Medicine. Lea Brothers & Co., Philadelphia and New York. 1903. Imperial 8vo. Pp. xii-1212. With Thumb Letter Index. Cloth, \$8 net; leather, \$9 net; half morocco, \$9.50 net.

"Dunglison's Medical Dictionary" has been the standard for colleges and practitioners for over sixty years, and in the systematic revisions through over twenty editions, it still holds its own. This magnificent volume contains a full explanation of the various subjects and terms of anatomy, physiology, medical chemistry, pharmacy, therapeutics, medicine, hygiene, bacteriology, pathology, surgery, the various specialties of practice, as well as of dentistry, veterinary science, etc. Of the about 600 illustrations, there are 85 full page plates, mostly in colors. The number of words new in this edition not in the 22d, issued three years ago, is about one thousand—showing that each day adds about two terms to the science of medicine. The purpose of the editor of this edition is "not to give merely a bald definition or array of synonyms, but to explain the subject denoted by the term." This Dictionary is intended to be a book of universal service—for undergraduates and graduates, and all others interested in any of the medical sciences. Prof. Leonard Pearson has revised the veterinary terms, and the late Dr. H. H. Burchard those of dentistry. As there is scarcely a community of doctors in the United States that is not familiar with Dunglison's Dictionary, it would be superfluous to use words of commendation about it. The present is a great improvement over any former edition. It is an indispensable book to the doctor.

Practical Medical Series of Year Books. Under the General Editorial charge of GUSTAVUS P. HEAD, M. D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School, etc. *Vol. IX.—Physiology, Pathology, Bacteriology, Anatomy, Dictionary.* August, 1903. Chicago: The Year Book, Publishers. 12mo. Pp. 233. Cloth. Price, \$1.25, or for the Annual Series of ten volumes, \$7.50.

Whoever becomes an annual subscriber of this series will get each year a good statement of advances in each department of medicine. It forms an invaluable addition to the library of any doctor who undertakes to keep up with the times, and the doctor of this day who does not read his journals and keep himself well supplied with standard text books is soon destined to be a drag upon the profession. The present volume notes the advances in pathology and anatomy—compiled by W. A. Evans, M. S., M. D., professor of pathology, College of Physicians and Surgeons, Chicago. Dr. Adolph Gehrmann, professor in the same college, notes the advances in Physiology, Bacteriology and Hygiene; William Healy, A. B., M. D., Instructor in Gynecology in Northwestern University Medical School, adds a dictionary of about 30 pages, double column, of new words used in medicine, etc., introduced in the last few years. In the Pathology of Yellow Fever, Malaria, etc., full descriptions and illustrations are given of the mosquitoes, etc., which have been of such interest as causative of this class of diseases, etc.

Text Book on Diseases of Women. By THOMAS ASHBY, M. D., Professor of Diseases of Women in the University of Maryland, etc. *With 233 Illustrations.* Baltimore: Williams & Wilkins Co. 1903. 8vo. Pp. 661. Cloth.

We scarcely know how to summarize an opinion of this book. It is a work of undoubted merit for the gynecologist who is well up in his specialty and wishes to find out what others of ability may say. But as a text book for students or as a practical work for the young practitioner who seeks a definite line of advice as to treatment, the book deals too much in generalities to serve his wants at the bedside. The surgical part of the work is well written—so far as major operations are concerned. But the everyday village and country practitioner who has not hospital facilities will not find in this the book he wants for his practice. Undoubtedly great good can be done by general practitioners with what the professional gynecologist may class as gynecological cases by other agents than the

knife, and this class of general practitioners want to know more of the details of such treatment without major surgical operations. The author has come near making a great book, but misses it in the matters suggested. When a second edition is called for, he can introduce the features which will make this a popular one with the profession at large.

Principles and Practice of Surgery. By GEORGE TULLY VAUGHAN, M. D., Assistant Surgeon-General in Public Health and Marine Hospital Service of United States; Professor of Principles and Practice of Surgery, Georgetown University, Washington, D. C., etc. Philadelphia and London: J. B. Lippincott Co. 1903. Cloth. 8vo. Pp. 569. Price, \$3.50.

This book, "designed for students and practitioners," admirably meets its purpose. As a student's text book on general surgery, it meets his every want; as the book for the busy practitioner—exclusive of some of the specialties, as otology, ophthalmology, etc.—it furnishes him well with the information he needs. The author writes well, describes diseases and operations and plans of treatment in a plain, unostentatious manner, and yet is precise and up-to-date in making differential diagnoses. The book contains all the essential parts of a work on general surgery—care having been exercised in leaving out unnecessary material for such a volume. In a general sense, as few words as possible are used so as not to sacrifice descriptions of importance and yet to make matters plain. Its size specially adapts the book for use in preparing for examinations before State or Government Medical Examining Boards, etc. For college student or practitioner, unless he seeks every detail of surgical history, etc., this book is well adapted. The book is handsomely issued, and a good index greatly helps one in searching for a subject treated of in the volume.

Practice of Medicine. By JAMES TYSON, M. D., Professor of Medicine in University of Pennsylvania, and Physician to the Hospital of the University, etc. *Third Edition. Thoroughly Revised and in Parts Rewritten. With 134 Illustrations, including Colored Plates.* Philadelphia: P. Blakiston's Son & Co. 1903. Large 8vo. Pp. 1240.

Tyson's *Practice* has become so well established in the favor of practitioners of experience that to them it is only necessary to say that this third edition is a great improvement over the second. It might well be styled the "text book

for practitioners and students, with special reference to diagnosis and treatment." Attention to treatment especially has been emphasized in the present edition—making it a trustworthy work of reference for graduates. So numerous have been the additions and changes throughout the volume that the entire book has been reset. The plain, practical manner in which the author explains some of the obtruse problems of diagnosis, and the easy descriptions he gives of diseases in general, give this work a very special value, as it enables the student or the practitioner to imbibe the truths as he reads, and causes him almost to wonder why he had not understood the subject in hand before. It would be impracticable to even note the many chapters or sections of special excellence. The typography is good, and the index is very full and well arranged. Under the heading of *Historical*, when treating of the more important diseased conditions, a section—sometimes covering as much as a page of small typed matter—is given, which will be found interesting reading. This is a great book, and one which all practitioners should possess.

Transactions of the American Pediatric Society. 14th Session, Held at Boston, May 26-28, 1902. *With Addenda from 13th Session, and an Index. Vol. I-XIV, inclusive.* Edited by WALTER LESTER CARR, M. D. Reprinted from *Archives of Pediatrics*, 1902.

The papers presented are all good, but have long since been before the medical public through the pages of the excellent journal from which this volume is practically a reprint.

Editorial.

Diagnostic Chart of Tumors and Pseudo-Tumors.

Battle & Co. have just issued a complete and unique chart on the above subject, compiled by Dr. Edward C. Hill from standard works on surgery and pathology. The subject matter is divided into solid neoplasma (sub-divided into benign and malignant growths) and true and false cysts. The general characteristics of each division are given, and their 24 classes, embracing over 100 varieties, are compared critically in columns under the following headings: Tis-

sue, topography, number, size, conformation, color, consistence, mobility, sensibility, surrounding tissues, occurrence, history of growth, and miscellaneous points. Features of special differential value are emphasized by the use of italics. This chart shows almost at a glance for ready comparison all that could be learned in a diagnostic way from the perusal of hundreds of pages of ordinary text. It stands, indeed, to such books as an atlas does to a gazetteer. This very convenient and valuable compendium is at the command gratis of any and every practitioner of medicine who will take the trouble of writing a postal card to Battle & Co., 2001 Locust street, St. Louis.

St. Andrew's Home, Lynchburg, Va.

This private hospital of Drs. Terrell & Lile closed its doors August 1, 1903, for the purpose of adding more rooms. Changes have been made in the interior whereby the large wards have been converted into private rooms. The conversion of these wards gives the hospital, delightfully located on Court street, ten more rooms. Wards will no longer be used.

Dr. Burnley Lankford, Norfolk, Va.,

Who graduated from the Medical Department of the University of Virginia, June, 1903, is taking a post-graduate course in Berlin. On his return, about a year hence, he may associate himself with his father, Dr. Livius Lankford, in the "city by the sea."

American Congress on Tuberculosis.

This Congress for the study of the Prevention of Tuberculosis, to be held in Washington, D. C., April 4-6, 1905, we look forward to as one of the most important that can arrest the attention of the profession. Dr. Daniel Lewis, New York, N. Y., is *President*; Drs. J. A. Eagan, Springfield, Ill., Frank Paschal, San Antonio, Texas, Irving A. Watson, Concord, N. H., and Chas. Wood Fassett, St. Joseph, Mo., *Vice-Presidents*; Dr. George Brown, Atlanta, Ga., *Secretary*, and Dr. P. H. Bryce, Toronto, Canada, *Treasurer*. Dr. Alfred Meyer, New York city, Consulting Physician to the Bedford Sanitarium for Consumptives, has been appointed chairman of the Committee in Charge of the *Section on Sanitarium Treatment of Tuberculosis*. It is probable that the climatic and other methods of treatment will be comprised under the work of this committee.

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Original Communications.

PHYSICAL EXAMINATION OF THE ABDOMEN OF THE GASTRIC PATIENT.*

By WILBUR F. SKILLMAN, M. D., Baltimore, Md.,

Lecturer on Diseases of the Digestive Tract, Woman's Medical College, Baltimore; Assistant Clinical Diseases of the Stomach, University of Maryland

Of all those diseases which fall into the hands of the general practitioner, none are perhaps more empirically treated than those affecting the stomach. In no class of diseases do the subjective symptoms vary to a greater extent from the typical and are more at variance with the pathological findings than in gastric disorders. And yet how frequently we see the physician prescribing without attempting any physical examination of the abdomen whatever—looking at the patient's tongue, asking after the bowels, feeling the pulse, giving a little pepsin and going away with a sense of work well done, being content with that most obscure of diagnoses—dyspepsia—a diagnosis that merely expresses a symptom, as the diagnosis of headache may merely express a symptom of uremia, eye strain or many other troubles.

Much can be learned from a routine examination of the abdomen of the gastric patient. The stomach may be mapped out and its size and position noted as well as its relation to other organs. By gaining a knowledge of the size and position of the stomach some idea may be formed at times as to the state of its secretions as well as its peristaltic power, as one function of the stomach cannot be interfered with without affecting the others; so if we find on examination a large dilated stomach showing evidence of decreased motor power we may reason "*a priori*" that the secretory power is also decreased.

*Read at the 105th annual meeting of the Medical and Chirurgical Faculty of Maryland, Baltimore, April 30th, 1903.

SIZE AND POSITION OF THE NORMAL STOMACH.

The stomach normally lies in the upper part of the abdominal cavity, over three-quarters of it being located on the left side of the body. It lies more nearly to the perpendicular than to a horizontal position within the abdomen and is applied closely against the diaphragm. It is an organ variable in size according to the individual as well as according to its state of distention. The lowest point of the greater curvature is usually found to be somewhere in the lower third of a line drawn from the ensiform cartilage to the umbilicus. It may usually be considered, however, that the stomach is not dilated if the greater curvature is found at any point above the umbilicus. The pylorus is normally not palpable being covered by the left lobe of the liver.

ABNORMALITIES OF SIZE, POSITION AND SHAPE OF THE STOMACH.

The stomach may vary from the normal as to size, position or shape, or a combination of these various elements may exist. It is not the purpose of this paper to go into the various causes of these conditions, but merely to state how they may be identified.

Increase in Size of the Stomach Dilatation—Gastrextasis.—In this condition either as the result of an atony of the gastric walls or as the result of a mechanical stretching, owing to an obstruction at the pylorus, the stomach becomes larger than normally and may even exist as a large pouch filling on distention almost the whole abdominal cavity.

Decrease in Size of the Stomach.—In certain conditions, as in stricture of the esophagus, the stomach may atrophy and become much smaller from disuse. Cases have been reported in which the gastric cavity was as small as a hen's egg.

Downward Displacement of the Stomach—Gastroptosis—Prolapse of the Stomach.—In this condition, which is the most frequent of the anomalies of position, the stomach is sit-

uated lower down than normally, the lesser curvature at times being found at the level of or below the umbilicus, while the greater curvature may rest so low as to press on the bladder causing frequent micturition. The tenth rib is often found floating in this condition and not attached to the costal cartilages as is normally the case (Stiller's sign).

Vertical Position of the Stomach.—The stomach is at times found in an almost vertical position in the abdominal cavity, the pylorus being found much lower and further to the left than is usual, the whole organ being practically on the left side of the body.

Hour-glass Stomach.—As the result of the contraction of the cicatrix of an old ulcer or from some other cause, a partial contraction of the walls of the stomach may occur thus dividing the organ into practically two cavities. This is a rare condition and is difficult of diagnosis.

Combinations of the Above Conditions.—Combinations of these various conditions may exist. It is not uncommon to find a stomach which is both dilated and prolapsed (*gastrectasis et gastroptosis*). It is easy to see how a stomach lying in an abnormal position in the abdominal cavity would be in a most favorable condition to have its motility interfered with, which would of course predispose to a dilatation.

METHODS OF MAPPING OUT THE STOMACH.

In ascertaining the size, position and shape of any organ four procedures are usually employed to obtain the desired information viz.—inspection, palpation, auscultation and percussion.

If we have a body of definite size, shape and resistance to the palpating hand these measures usually suffice; but in dealing with the stomach we must remember that we have to do with a hollow collapsable bag, varying in size and consistency according to the degree of its distention and the quantity and quality of material it contains. If then, we attempt to map out the stomach by the ordinary methods of physical diagnosis without knowing anything of its contents or the amount of its distention we may make grave errors in diagnosis.

Much can be learned from a simple physical examination of the abdomen, but our results must always be verified by special methods for conducting the physical examination of the stomach. These special methods for the physi-

cal examination of the stomach may be divided into two types:—

1st.—Methods using some special procedure of physical diagnosis, other than those ordinarily used.

2nd.—Methods by which the stomach is made an organ of fixed size and position by distending its cavity by fluid or gas so that it may be mapped out by the ordinary procedures of physical diagnosis.

I.—METHODS OF USING SOME SPECIAL PROCEDURE OF PHYSICAL DIAGNOSIS.

Auscultatory Percussion.—The note given on percussion over the stomach is often difficult to distinguish from that given by a colon which has become somewhat distended with gas, and so it is difficult at times during percussion to tell when we reach the limits of the one and go over on to the other. To obviate this difficulty a method has been devised which combines auscultation with percussion, and which while usually very accurate still does contain certain sources of error. The bell of a stethoscope is placed over the epigastrium and then the stomach is lightly percussed. The percussion must be done very lightly to produce the most accurate results. As long as we percuss over the stomach the impulse transmitted to our ear through the stethoscope is very loud and clear; but the moment that our percussing hand gets beyond the limits of the gastric cavity the note changes and is by no means as loud as well as being of a different pitch. At times, however, if both the stomach and colon are partially filled with gases it is almost as difficult to detect the change of note with the stethoscope as without it. The liability of error of taking the transverse colon for the stomach in this method may be made less likely by percussing over the ascending colon while still keeping the stethoscope over the the suspected area and listening if the note is still transmitted to our ears with the same intensity.

Succussion Sounds—Splashing Sounds.—If the stomach be partially filled with fluid and the palpating hands be placed over it on the abdominal walls some little distance apart and rapid alternate movements of the hands be made so as to shake the stomach, a splashing sound will be heard usually even to some little distance away from the patient. At times, however, it is only audible by means of a stethoscope placed over the stomach on the abdominal

wall. This sound is made use of for the purpose of locating the position of the stomach, as, if we are able to produce it in the lower part of the abdomen (below the umbilicus), we know the greater curvature is lower than it normally should be; but whether we are dealing with a dilated or fallen stomach we are usually unable to state. If the splash exists all the way from the ensiform cartilage down to the point where it is lost altogether we may be tolerably certain we are dealing with a gastrectasis, but if we have an interval between the ensiform cartilage and the place where the splash is produced it is hard to state whether we are dealing with a gastrectasis or a gastropsois. So many sources of error enter into this method—the impulse being transmitted through distended coils of intestine to the stomach at some distance away from the hands or by the splash being caused by liquid contents in the intestine—that we should simply consider information thus gained as corroborative of more accurate methods.

Electro-Diaphany.—If a stomach tube to the end of which a small incandescent electric light is attached (electro-diaphane) be introduced into the stomach—the patient first drinking a quantity of water—the reflection of the light will be plainly seen on the abdominal walls, if the room be darkened. By this method, introduced by Einhorn, we can map out the stomach with a fair degree of accuracy and oftentimes tell whether tumors are located on the anterior or posterior wall by noticing whether they cast any shadow in front of the lamp. This method, however, is no more accurate than other and simpler methods, while the expense of the apparatus and the inaccessibility of the electric current in many places render it of little practical value.

METHODS IN WHICH THE STOMACH IS FIRST DISTENDED WITH FLUID OR GAS TO MAKE IT AN ORGAN OF FIXED SIZE AND POSITION.

In the foregoing methods the limits of the stomach were obtained without making any effort to fully distend its cavity, thus making it of a fixed size and position. In the following which are by far the simplest and most accurate methods, the gastric cavity is first fully distended with fluid or gas thus giving it a fixed size and position and a definite resistance to the palpating hand, and then mapped out.

Distention by Water.—If the stomach be distended by drinking a large quantity of water (one quart) it will be found to give a dull per-

cussion note, which is much easier to distinguish from the tympanitic note of the surrounding intestine than that normally given, making it a matter of much less difficulty to locate that organ. *Dehio's Modification* of this method consists of examining the patient standing and giving him the water in four portions of one-half pint each, percussing out the lower border of the stomach between the drinking of each portion of the water. By this method, not only is the position of the greater curvature accurately shown, but some idea may be gained of the elasticity of the gastric walls, for if the greater curvature is found much lower in the abdomen after each portion of water we know that an atony exists. Hour glass stomach may be sometimes diagnosed by distending the stomach with water, the cavity nearest the cardia filling first and then the cavity toward the pyloric end. By placing a stethoscope over the stomach a gurgling sound may be heard as the water flows slowly into the pyloric sack.

Distention with Air or CO₂.—The simplest as well as by far the most accurate method of locating the stomach for routine work is by distending its cavity with air or CO₂. We can then usually see it standing out on the abdominal wall and can generally make our diagnosis from inspection alone, although in very stout persons palpation and percussion must be added to our inspection. Occasionally the stomach will be found already distended for us from the formation of gases within its cavity or from swallowed air (pneumatosis); but unless it is distended enough to be seen by inspection alone never trust to this natural formation of gases as you may think you have mapped out the stomach when on artificially distending the organ you will find that your outlines are totally wrong. Unless the gastric cavity be thoroughly distended it is impossible to accurately distinguish it from the surrounding intestine, but when it is fully inflated the problem becomes easy.

Distention with Air.—If the patient be used to the stomach tube, this is the best method as we are absolutely able to control the amount of air introduced. The patient lying in the dorsal position, the stomach tube is introduced and a double bulb apparatus such as is used on some atomizers, etc., is placed on the other end. Air is now slowly pumped into the stomach by means of the bulbs until the desired degree of distention is accomplished.

Never distend the stomach enough to cause pain. The only objection to this method is the fact that the patient must first become used to the stomach tube.

Distention with CO₂.—The patient is given on an empty stomach a little less than 3i of tartaric acid dissolved in a small amount of water, followed by a little more than 3i of bicarbonate of soda in a corresponding amount of water, the patient being instructed not to belch. The soda is given last to neutralize the acid taste left in the mouth. These two solutions coming together cause a brisk effervescence of CO₂ which rapidly distends the stomach. While the doses given above are the usual ones, it will be found that greater quantities may be required in cases of old, large, dilated stomachs. Only use the best qualities of acid and soda as with inferior grades varying quantities of gas are produced which will prevent you from obtaining the best results. While this method is usually absolutely harmless it is best never to use it without first having a stomach tube handy so as to be able to rapidly evacuate the stomach, as being unable to control the amount of gas introduced dangerous pressure symptoms may be produced in certain patients. These symptoms rapidly pass off, however, if the stomach is promptly emptied of its gas. A word of warning in using this method; the stomach may become intolerant of the gas and suddenly expel it with explosive violence. Be on the watch for this as otherwise you may be treated to an unexpected shower bath of the mixture of acid and soda as well as whatever else the stomach may happen to contain.

1304 W. Lafayette Ave.

RETAINED INTUBATION TUBE, WITH REPOST OF A CASE.*

By ALBERT A. CANNADAY, M. D., Roanoke, Va.

Ever since O'Dwyer began to practice intubation there have been what is now called "retained intubation tubes." Prolonged intubation is a term given to that condition which requires the tube longer than six days. A considerably

longer period than this is denominated "retained intubation tubes."

According to the statistics of the most recent observers, these cases occur once in every one hundred cases. The writer of this paper has had only one case of retained intubation tubes and 100 cases of intubation. Thus the percentage (1 per cent.) is in perfect accord with this experience. A tube that has to be retained longer than 15 days should be called a retained tube.

The life-saving value of intubation compared with such operations as appendectomy, ovariectomy, and even tracheotomy, puts it in the first place. Since this operation has been in vogue, thousands have been saved. The mortality of diphtheria has been materially lessened and science has made one great stride forward. To O'Dwyer, science owes a debt of gratitude that she can never fully pay. To those who wish to see mortality statistics cut down and life saved, intubation should be an inspiration.

We think the following case of sufficient importance to be reported to this Society:

On the 27th day of March, 1903, I was called by Dr. Brown, of Roanoke, Va., to intubate H. P., age two and one-half years. This little girl had an attack of membranous croup. The doctor had used the usual methods to relieve his patient, but found intubation absolutely necessary. This we did at once, and on the first attempt—using the latest O'Dwyer rubber tube, gold lined, made by the George Ernold Co., of New York. It was a new tube, having never been used before, and a perfect fit. The patient was given antitoxin, and the case progressed nicely, when on the 4th day, as was the usual practice of Dr. Brown, he removed the tube. No sooner was this done than it became apparent that the tube must be replaced, and that quickly. I was hurriedly summoned and arrived just in time to save our little patient's life. From now on for the next 40 days we had an experience that we would not like to have repeated. The ever and constant dread that our patient would cough up the tube and that we would be too late to be of any service, preyed on our minds and kept us uneasy all the time; in other words, we felt the great responsibility that we had assumed. On the 9th day the tube was coughed up. I was again hurriedly summoned and fortunately arrived in 20 minutes, and once more succeeded in replacing the tube. I remember how this little girl

*Read by title before the 34th annual session of the Medical Society of Virginia, held at Roanoke, September 15-17, 1903.

begged to have the tube replaced, and when it was in, she wanted no more of the doctors. Of course, the relief was immediate. It now became evident that we had a case of "retained intubation tubes," and we realized what that meant. The tube might have to be worn 20, 40, 60, or 300 days, or indefinitely—no one could tell. At this time (April 10th) Dr. John Dunn, of Richmond, Va., was called in consultation, and he readily agreed with us that we had a case of "retained tube."

We went from place to place—residence to office, office to residence, expecting to be called at any moment. We kept the family notified as to our whereabouts. The tube was removed about every 3 or 4 days, cleaned and replaced, for it had to be replaced, and sometimes very quickly. The child was now up and out of doors, doing well, but could not do without the tube.

On the 5th of April I carried the patient to my office, Dr. Brown removed the tube. The breathing was rather labored, but as there was no immediate danger, we allowed it to remain out till that night. At 8 o'clock the patient began to choke up and it was thought advisable to replace the tube for the night—(the patient was now at my house) which we did, but allowed it to remain for two days, when it was again removed, this time to go back no more. The breathing was somewhat labored, but better than at any time before. Our little patient continued to improve, so that it was not necessary to reintroduce the tube.

I have made observations from time to time since, and I do not think that she has any stenosis now; if she has it is very slight.

As to the pathology of the condition calling for this operation, there seems to be some difference of opinion. The following from O'Dwyer's classical paper read before the American Pediatric Society in 1897 will give his views:

"1. The cause of persistent stenosis following intubation in laryngeal diphtheria can be summed up in the single word—traumatism. Paralysis of the vocal cords may possibly furnish an occasional exception to the rule. 2. The injury to the larynx is done by a tube which does not fit properly. It may result either from an imperfectly constructed tube, or from a perfect one which is too large for the lumen of the larynx, although suitable to the age of the child, or from a tube that is perfect in fit

and make, if it is not cleaned at proper intervals. 3. The seat of the lesion which keeps up the stenosis is just below the vocal cords in the subglottic division of the larynx, or that portion bounded by the cricoid cartilage. Exceptions to this rule result from injury produced by the head of the tube on either side of the base of the epiglottis just above the ventricular bands."

In a more recent article, Dr. Duell has shown that the 'stenosis does not always occur from traumatism, but that there is a ring of adenoid tissue in the sub-glottic region that swells and becomes spongy and is slow to assume the normal condition. This is the view taken by myself, especially as no traumatism was produced in this case, and the tube was a perfect fit, was kept clean at proper intervals, and was a rubber tube, as stated above. In this case, as well as all others where skilled assistance cannot be had at all, I left the string in, using a rather heavy braided silk, which is difficult to bite into. Sometimes a child will bite the string in two. This does not occasion much inconvenience, as the tube can be removed and another inserted.

The reasons for leaving the string in were, 1. There was no skilled assistant at hand to extract the tube in case it should become blocked with a thick, tough piece of mucus. 2. There is less traumatism produced, as removing the tube with the extractor is rather more difficult than its introduction.

Shurley, in a recent article published in the *Journal of the American Medical Association* July 11, 1903, speaking along these lines, says: "The expression of O'Dwyer's tube is a dangerous practice and should be avoided. In private practice, the string should be left in place if possible when there is an extension of membrane below the tube."

Goodall as well as others maintain that frequent expulsion of the tube is an indication for tracheotomy. In this opinion, I can not agree, as it has been shown that this is a bad procedure.

O'Dwyer says that "tracheotomy is the worst possible thing that can be done, for healing of the ulceration is promoted too rapidly after operation and a sub-glottic stenosis results."

In conclusion, I wish to say that I hope it will never be your misfortune to have a case of "retained tubes." If you should, I hope you will persevere, as the life you save is worth the trouble.

I also wish to digress a moment to say that: It does seem strange that most of our medical colleges will graduate young men who do not know how to intubate, who possibly never saw a case and who are not familiar with the use of the intubation set; but still these same colleges will devote considerable time to such things as tests for arsenic, description of the ventricles of the brain, the petrous portion of the temporal bone, etc., and still continue to neglect such an important, and life-saving device as intubation. I do not say that it is not necessary to know the above; but I do say that it is far more necessary to know how to intubate. It is a well known fact that possibly more lives can be saved by intubation than by any other surgical operation, excepting possibly appendectomy. I mean the results are positive. You see that you have saved the life of your little patient. In most other operations, your efforts are doubtful—your patient might have recovered without your aid. Not so with intubation.

Not only the city physician should be able to do this operation, but the country physician as well; in fact, the country physician, having to rely upon his own skill and not having the services of a specialist, needs to be expert in this line. I believe the time will come when every physician will be more or less skilled in the use of the intubation set and that these instruments will be as common as the catheter in the pocket case of every physician.

There are only three or four size tubes that are usually used. These could be put in a pocket case with a folding introducer, all of which would take up but little room. A cork could be used for a gag, the string could be left in the tube, this would obviate the necessity for an extractor. I wish to see such a case in the near future in the hands of every physician.

TREATMENT.

The treatment used by Dr. Brown and myself was the early administration of antitoxin, which in this case seemed to have but little effect of the patient. Alterative doses of calomel were given for quite a while. Inunctions of mercurial ointment were also employed. Thinking that adrenalin chloride was indicated, it was used. Shurley, in the article referred to above, has also used this drug. It apparently did some good. Tonics and alteratives were used judiciously. The patient was put out of doors when the weather would permit. A trained nurse was in attendance most of the

time. The child had the advantage of a comfortable home, and nothing was omitted that seemed to be indicated.

If I had a case to treat now, I would try 12 per cent. alum ointment put on the tube every time it had to be reintroduced. This is recommended by Shurley, and seems to be a good thing. I do not think tracheotomy should be done unless the tube could not be kept in place.

LABORATORY DIAGNOSIS IN GASTRIC DISORDERS.*

By E. GUY HOPKINS, M. D., Richmond, Va.

The "Clinical Laboratory" is one of the most recently developed factors in the evolution of medical science, and is beginning to play an important part in its struggle for precision. This struggle has been going on for centuries, ever since men turned from metaphysical speculation to practical experiment as a more direct road to truth.

With the resolve to know by actual experiment came the necessity for a places adapted to accurate observation and study. First, the anatomical theatre was instituted. Later, in the 17th century, the chemical laboratory was the most prominent source of scientific advance. The 18th century gave us the surgical clinic and free dispensary. In the early part of the 19th century Purkinje established a physiological laboratory. In 1856 Virchow instituted the first pathological laboratory.

At the end of the 19th century a vast amount of accurate knowledge had been gained from these various sources, and a multitude of elaborate medical problems had been solved. Many of these problems were quickly reduced to such simple formulæ as to be of immediate application; for instance, the relation between albuminuria and nephritis; but for the practical application of the majority of them the advantage of an especially fitted workshop became evident.

Among the first Clinical Laboratories established were those of Curschman and Von Ziemssen. Since then the Clinical Laboratory has become an indispensable adjunct to every hos-

*Read before the Medical Society of Virginia during its thirty-fourth annual session, held at Roanoke, Va. September 15-17, 1903.

pital; and its field of usefulness has so extended that at present there are few cases in which it may not be called on to render signal aid in attaining a precise diagnosis.

In no class of diseases is it of more value than the diseases of the stomach, for it is only by the clinical examination of the gastric contents that a final decision can be rendered in regard to the perverted functions of that organ.

To Lenbe belongs the credit of originating this method of clinical investigation. In 1871 this investigator attempted to determine the motor function of the stomach by withdrawing its contents after a meal. In 1879 the administration of a definite test meal to be withdrawn at the height of digestion for the purpose of studying the secretory function was recommended by Reigel, and the same year Von der Velden introduced the hydrochloric acid question, using methyl violet as a test, and stated that the absence of hydrochloric acid in gastric contents was pathognomonic of cancer.

This, however, was disproved a year later by Edinger. Many new color tests for hydrochloric acid were devised within the next few years. The validity of all of these was denied in 1886, when by chlorometric methods hydrochloric acid was demonstrated to be present in stomach contents giving negative color reaction, thus leading directly to experiments which resulted in the differentiation between loosely combined hydrochloric acid, which could be determined by chlorometric methods, and free hydrochloric acid, which responded to color tests.

With these discoveries came the demand for practical quantitative tests for free and combined hydrochloric acid. These were finally devised, and by the study of perverted hydrochloric acid secretion and other manifold variations of the stomach contents, so many new facts were discovered that the present conception of diseases of the stomach is radically different from that of fifteen years ago, and a physician of to-day is able by the aid of clinical examinations to make precise diagnoses of, and so cope successfully with, many diseases of the stomach which would then have baffled every effort.

The principal object of the clinical examination is to determine the amount of work done by the stomach, in what way its functions are perverted, and to detect any variations in the composition of the gastric contents indicative of disease.

In order to accomplish this a definite test meal is administered as a physiologic stimu-

lant to the functions of the stomach, and withdrawn at the height of digestion for analysis. Many different test meals have been proposed; the most important of which are Ewald's breakfast; Reigel's dinner; and the acid free meal of Boaz. Ewald's breakfast consists of,

Two slices of dry bread on toast. 3j.

A glass and a half of water. 3x.

This is administered at breakfast time and is withdrawn fifty minutes later; and has proven more generally useful for practical work so far than any other. Its advantages are that it is composed of material universally used as food; it is easily procured anywhere; the examination may be made within an hour after its ingestion; many patients are able to swallow it who would not be able to take a larger meal. There is no difficulty in selecting the time when digestion is at its height; and finally, its withdrawal at this time is accomplished with greater ease than is the case with the coarser meals.

If the physician is not satisfied that the stomach is completely empty at the time of administering the test meal, it should be preceded by lavage, and the wash water set aside for subsequent examination for residual food, mucus, pieces of gastric mucosa, excessive secretion, etc.

The patient is then instructed to ingest the meal, masticating slowly and thoroughly. Within an hour, if Ewald's meal has been administered, the gastric contents are siphoned off into a graduate until no more can be procured. It is rarely possible to obtain the total amount by siphonage, and in order to estimate this 100 c. c. of water is now allowed to run into the stomach, time given it to mix with the remaining contents, the tube inverted, and the diluted contents received in another vessel. The difference in the degree of acidity of these two specimens furnishes a basis of a simple algebraic calculation by which the total amount of the stomach contents may be determined. The normal quantity after Ewald's meal is 100 to 150 c. c.

The first step in the analysis of the gastric contents thus obtained is the determination of its physical properties. The quantity is important, as it gives valuable information as to the motor function of the stomach. If the quantity is above normal, the motor function is impaired. If the quantity is diminished, either motility is increased or pyloric insufficiency may be suspected.

The appearance is next noted. If, on stand-

ing, the fluid separates in three layers, at the bottom of which is the white food residue, and at the top a layer of foam, then gaseous fermentation exists. A large quantity of fluid containing a fine mealy precipitate of amylaceous residue is seen in chronic hypersecretion, and is very distinct in appearance from the scanty amount of pultaceous material obtained in cases of simple hyperchlorhydria. The appearance of mucus in any considerable quantity always indicates gastritis. This usually occurs in the form of strings or shreds in the incipient stages—in glassy transparent masses in the later stages. A green color may be due to bile or certain vegetable organisms, notably *algæ* and mould. A decision as to the presence of bile should never be made without a chemical test. If persistently present, bile indicates pyloric insufficiency or duodenal stenosis. A red color is usually due to the presence of blood, but may (according to Knapp) be produced by the presence of certain variety of fungus.

The odor of the gastric contents may be characteristic of certain volatile acids such as butyric, acetic, or succinic, which indicates excessive acid fermentation. Lastly the specific gravity of the filtrate may give valuable information in regard to the actual amount of the gastric juice poured out. As a rule the greater the amount of gastric secretion the lower the specific gravity. In chronic hypersecretion the specific gravity often falls to a 1.003-4; normally it should be 1.010-15.

Although much important information is gained from the physical characteristics of the gastric contents, it is only by the chemical examination that we are able to determine the degree of the digestive power of the stomach, and what perversions of its secretory function exist.

The first question is whether the stomach contains free hydrochloric acid. This is answered by Guntzburg's test. The re-agents are a 2 per cent. alcoholic solution of vanillin and a 4 per cent. alcoholic solution of phloroglucin. To three drops of each of these solutions on a porcelain dish is added six drops of the liquid contents of the stomach, and the mixture slowly evaporated by passing the dish backwards and forwards over an alcoholic flame, with a tilting motion to give a wider area for evaporation. If free hydrochloric acid is present a rose tint appears at the edge of this area and rapidly ex-

tends over it along fine lines. If free hydrochloric acid is absent, the color is a greenish yellow. In the latter case we know immediately that the digestive power of the stomach is insufficient. Whether this deficiency is partial, as in gastritis, or total, as in achylia, is to be determined later. If free hydrochloric acid is present, the quantity may be diminished, a condition called hypochlorhydria, or increased when we speak of it as hyperchlorhydria.

In a quantitative determination of the acids of the stomach contents, the factors considered are—the free hydrochloric acid, the organic acids, the acid salts, and the combined hydrochloric acid. The combination of all of these factors is known as the total acidity of the gastric contents. The method of determining the degree of each of these factors is by the titration of a definite amount of the gastric contents with one-tenth normal soda solution until the characteristic color test for the required factor is negative, thus indicating its neutralization. The arbitrary standard chosen to express numerically these degrees of acidity is the number of c. c. one-tenth normal soda solution required to neutralize the given factor in a 100 c. c. of gastric filtrate.

For practical purposes 5 c. c. of gastric filtrate is placed in a beaker and 5 drops of Töpler's re-agent (5 per cent. alcoholic solution of dimethylamidoazobenzol) added, which in the presence of free hydrochloric acid turns a brilliant red; the titration is commenced and continued until the color changes to a pure yellow. If only 5 c. c. of the filtrate is used the reading of the buret is multiplied by 20 to bring it up to the standard of 100 c. c. and gives the degree of free hydrochloric acid present. The titration is now continued, using Congo red as an indicator, and when a platinum loopful of the titrated contents no longer causes the appearance of a blue gray color when placed in contact with a drop of Congo red solution, the factor due to organic acid has been neutralized and the reading of the buret now multiplied by 20 represents the degree of acidity due to the free hydrochloric acid plus organic acids. Five drops of a 1 per cent. mixture of alizarin in water is now added, and the titration continued until the color of the mixture changes from a dark red to a pure violet, indicating that the acid salts have been neutralized, and the reading of the buret at this time multiplied by 20 indicates in standard degrees the acidity due to free hy-

drochloric acid plus organic acids plus the acid salts. The total acidity is next determined. The buret is refilled to the zero mark; another 5 c. c. of the gastric filtrate is taken, to which is added five drops of 1 per cent. alcoholic solution of phenolphthalein as an indicator.

The titration may be carried on rapidly at first until the red no longer disappears on shaking the beaker, then slowly until the maximum red is reached. This is the end reaction and the reading of the buret multiplied by 20 indicates the total acidity which includes that due to combined hydrochloric acid. By subtraction the degree of each factor may now be calculated. Thirty degrees is usual for free hydrochloric acid, more than 40 constitutes hyperchlorhydria, less than 20 hypochlorhydria. The first condition may occur as a specific neurosis in the early irritative stages of gastritis, and it is an almost constant symptom of gastric ulcer. Hypochlorhydria is less significant taken singly, but plays an important part in the symptom complex of gastric atony, gastritis and incipient carcinoma.

Organic acids are normally never present in appreciable quantities in the stomach contents one hour after a test breakfast. The presence of considerable quantities indicate pathologic fermentation. In those conditions in which free hydrochloric acid is persistently absent, notably carcinoma, lactic acid is chiefly found, frequently exceeding one-tenth of 1 per cent. Although lactic acid has lost its pathognomonic value for cancer of the stomach it is still the surest symptom when no tumor can be felt (Boaz). The simplest method of demonstrating its presence is Kelling's; 5 c. c. of the gastric filtrate is diluted with 50 c. c. of water and a drop of 10 per cent. solution of ferric chloride added. The appearance of a greenish yellow tint when a test tube is held to the light indicates the presence of lactic acid.

Other organic acids—acetic, butyric and succinic—have been generally considered of secondary importance, merely indicating excessive acid fermentation under conditions favorable to this, as in gastrectasia or chronic gastritis. Recently, however, Knapp has noted conditions in which they are of primary importance, designating them under the generic term—*organo-acida gastrica*; the most important of these conditions he calls *gastrosia fungosa*. This condition is caused by the growth of mould in the stomach and is characterized by excessive forma-

tion of succinic acid with its consequent irritative effects.

The test described by Knapp for succinic acid is as follows: extract with 5 c. c. of ether in a separatory funnel, 1 c. c. of gastric filtrate, after which the gastric filtrate is allowed to flow out, and the ethereal extract is run into a test tube, so as to overlie 2 c. c. of water, to which has been added 2 drops of a 10 per cent. solution of ferric chloride, as in any ordinary contact test. Succinic acid is indicated by the appearance of a mahogany ring at the line of contact. This test is also useful for the other organic acids, lactic acid giving a sulphur yellow ring at the line of contact, butyric an orange, and acetic a red ring.

The degree of acidity due to the acid salts is of no importance except in the estimation of combined hydrochloric acid, which latter is very important. If combined hydrochloric acid is reduced, gastric digestion is impaired; if persistently absent the function of gastric digestion is lost. The latter condition only occurs in atrophy of the gastric tubules, advanced gastritis and carcinoma.

Usually the physician will have been able to formulate a distinct idea of the perverted functions of the stomach by the application of the foregoing methods of diagnosis, and the tests for the ferments being of minor importance may generally be omitted, except in rare cases.

The microscope may furnish valuable corroborative evidence. In benign cases of gastrectasia, sarcinae are always present in large numbers (Oppler). In the majority of cases of carcinoma the thread bacillus of Oppler-Boaz occurs in large numbers. The presence of this bacillus is said to have the same diagnostic value as large quantities of lactic acid.

It is of the greatest diagnostic importance to detect carcinomatous particles in the stomach contents, as being the only pathognomonic sign of cancer. Recently Dr. Hemmiter has devised a method by which the detection of these particles is no longer accidental, as has been the case heretofore. Suspected cases are first subjected to thorough gastric lavage; then fed per rectum for 48 hours: at the end of this time the stomach is again washed out with normal salt solution, using a soft tube having a firm ring around its lower opening. During the lavage the tube is moved about actively, in order to dislodge cancer particles from the stomach. The wash water is then allowed to settle for six or

eight hours; after which the sediment is examined for cells in a state of atypical (asymmetrical) mitosis.

In a concluding summary of the practical value of clinical examination of the gastric contents, it may be stated that, in only one instance does it furnish a sign which taken singly is of pathognomonic value—the finding of carcinomatous particles in cases of cancer of the stomach. In many other conditions, the result of the analysis taken as a whole gives a symptom complex highly characteristic of certain conditions, and furnishes the only means in making a diagnosis, as in simple hyperchlorhydria, chronic hypersecretion and the different forms and stages of gastritis. In still other cases it may furnish the essential links in a chain of evidence already partly formed, but requiring additional strength to make the diagnosis complete, as the detection of lactic acid and Oppler-Boaz bacilli in carcinoma, the continuous secretion of hyperacid juice in ulcer, or the finding of sarcinae in benign gastrectasia. Finally whether an anatomical diagnosis is possible or not the clinical examination gives a functional diagnosis which is of inestimable value as furnishing a basis for rational therapeutics.

EFFECTS AND TREATMENT OF ADENOIDS.

By H. M. DEJARNETTE, M. D., Charlottesville, Va.

Specialty: Eye, Ear, Nose and Throat.

Adenoids are lymphoid growths in the rhinopharynx of children, and are known as pharyngeal tonsils. They may remain permanent, and often extend into the pharynx.

Symptoms.—The child is either stupid or extra *bright*, but as a rule has a stupid expression of face, and is dull and apathetic—semi-conscious of his or her surroundings. He is fidgetty and always in motion—either as to his hands, feet, body, eyes, or some set of muscles. And why? Because there is want of something and he knows not what it is. *It is oxygen* he wants. As a rule such children are considered bad in some ways because they are constantly being irritated by the CO₂ in their systems, and if this poison were eliminated properly they might be excellent children and would appreciate good health more than a child that was

never sick, and would appreciate the difference. The diseased child never has rest; he has to do *something*, but of course he never thinks of *removing the real cause*. If you give such a child rest you will not have to bother about his happiness as it is sure to follow. But such a child never gets rest. They get up in the morning tired as if they had been doing manual labor, and they have been working all night trying to get enough oxygen and eliminate CO₂ and the poison that has been taken in from this diseased adenoid tissue.

The inspired air not being moistened and warmed, the respiratory organs suffer. As he is a mouth breather the physiological channel for air and secretions of the frontal sinuses, ethmoidal cells, sphenoidal sinus, and maxillary sinuses are all obstructed and drainage from the eyes is blocked. The secretions are drained into the nasal cavities and there become putrid, as nature's best antiseptic, "fresh air," cannot get there. Then this poison is taken back into the circulation through the mucous membrane of the diseased turbinates, and the erectility of the tissue of a diseased turbinate is very great. Then trouble begins in the connecting sinuses and cells.

The superior maxilla becomes mal-shaped, and when the inferior maxilla does not fit the superior it looks as if it were mal-shaped. The teeth of the upper jaw are as a rule crowded or overlapped, because when the child is asleep and mouth open there is scarcely any current of air through the nares. When the child breathes in 14,000 times and breathes out 14,000 times—28,000 acts of breathing each night—so many times is the current of air thrown against the roof of the mouth (which is 28,000 taps against the superior maxilla every night) that this causes overlapping of the teeth of upper jaw.

This adenoid tissue often extends into the pharynx, and there these masses often press against the opening of the Eustachian tubes. When they are closed the air in the middle ear is absorbed and the drum membrane is pressed in by external atmospheric pressure. If left in this condition the bones of the ear become ankylosed. The membrane over the foramen rotundum loses its elasticity and becomes thickened, and if that be the case we have impairment of hearing, as the foot plate of the stapes cannot be pressed into the fenestra ovale unless there is some part of the wall that is elastic, and the membrane over the fenestra rotunda is the

only part of the wall that is elastic. Hence when this membrane loses its elasticity and becomes thickened the vibration of the foot plate of stapes is very limited. Then we have impairment of hearing.

When the Eustachian tubes are healthy they are opened at each act of deglutition and air is forced into middle ear; but such is not the case if a mass of this diseased tissue is in the opening of tube or presses against the pillars of the same. A foreign substance will remain doubly as long in the anterior nares as it will in the posterior nares without becoming putrid. Hence this rhino-pharynx should be kept open, especially as a current of fresh air is nature's deodorizer and disinfectant, and will do more good in overcoming the effects of adenoids than any medicine one can use in the nose. Thus a free current of air through nasal cavities is very important. It keeps the parts clean, and "cleanliness is next to Godliness." A diseased child is seldom good.

"Nightmare" is a symptom. When a child wakes up in the night screaming and crying, or wanders off quietly, or walks in some dangerous place—that child is not awake; only the lower centers are awake. The higher centers are poisoned from want of proper nourishment in the brain, and are dormant, while the lower centers are being irritated by this poison from the blood. Why are these poor creatures allowed to suffer and go through life handicapped?

1st. Because the child does not know what to complain of, and, if asked, would say he is not sick.

2nd. Because his parents, grand-parents, etc., were not treated for this trouble and went through life with a nose that was worse than useless.

3rd. The family physician rarely thinks of looking in the rhino-pharynx for the trouble. Even when called in, he simply prescribes a nose-wash and goes on with a clear conscience, thinking the child has a cold in the head.

So these children drift on with this disease until some worse disease takes its place.

Treatment is simple. Remove the diseased tissue. There are many kinds of forceps and curettes, but for small children the Quininalin forceps seems to be the ideal instrument.

RECAPITULATION.

When a child has the apathetic expression, breathes through his mouth, snuffles, holds his head back, cannot hear well, the upper teeth

overlap, palate is arched, is dull and stupid at books, walks in his sleep, has nightmare, is fidgetty and restless, and does not grow as a child should, look in the rhino-pharynx and generally you will find the weight that drags him down.

PERINEAL PROSTATECTOMY WITH REPORT OF TWO CASES.*

By J. SHELTON HORSLEY, M. D., Richmond, Va..

Professor of Principles of Surgery in the Medical College of Virginia; Visiting Surgeon to the Memorial Hospital.

So much has recently been written about prostatectomy that the subject, which was much neglected previously, is now receiving its full share of attention. The technic and history of the various procedures have been clearly brought out by Young, McRae, Ferguson, Senn, Murphy, Syms, Fuller and others, and it is superfluous to dwell upon them here. But in spite of the numerous and excellent papers that have appeared in the last year or two, the medical profession generally does not seem to have grasped the idea that sufferers from enlarged prostates, when in fairly good physical condition, can be absolutely cured of their trouble, and need not be condemned to permanent catheter life with its attendant disagreeable and dangerous features. Nor is there any need of abandoning patients who are too feeble to undergo a radical operation, for the Bottini operation of incising the prostate with an electric cauterium will relieve a great many of this latter class. So there is hardly any prostatic that need be permanently committed to the catheter without an effort to restore him to approximately normal conditions, either by prostatectomy or the Bottini operation. Without attempting to go into details as to which of these two methods should be employed, it may be said that if the patient is in good physical condition, with fairly good kidneys, he should be given the advantage of a prostatectomy, either partial or complete. If, however, his general condition is bad, and his kidneys markedly diseased, the Bottini operation should be used as being less severe. This seems to be a more reasonable way of selecting these cases than an arbitrary age limit.

*Read by title before the Medical Society of Virginia at Roanoke, Va., Sept. 15-17, 1903.

As to the choice between supra-pubic and perineal routes, the former, which was at one time so popular, has fallen into disfavor, and the perineal route, with or without a supra-pubic incision for depression of the prostate, is now almost universally employed. There are, of course, exceptions, as when the enlargement extends into the bladder in such manner as to make the supra-pubic operation preferable, though this condition rarely exists.

Both of the cases mentioned below were operated upon at the Memorial Hospital in Richmond, and though it is too soon to speak of permanent effects, the fortunate results obtained so far, and the fact that each case represents a different type of prostatics, induces me to report them.

Case 1. Mr. A. C. L., Sideway, Virginia, age 58 years, farmer, married. Admitted to Memorial Hospital July 27, 1903. Father died of prostatic disease, mother of consumption. Has had several brothers and sisters, all of whom are dead; causes of death not clear, but tuberculosis probably figured in at least some of them. Tendency to consumption on both sides of the family.

Patient has never had lung trouble and health has been very good until several years ago, when he began suffering from shortness of breath and occasional slight swelling of his legs, supposed to be due to rheumatism. There is no history of urinary examination at that time. Has never passed blood or gravel in urine. His present urinary trouble began about 18 months ago. He thinks that it was caused by a fall on a saddle. Urination became somewhat difficult about that time, and gradually grew more difficult and painful till for two weeks before operation a catheter had to be used constantly. His urine was clear and, he thought, had recently increased in quantity. Urinary analysis showed a light amber color, a specific gravity of 1012, acid reaction, small amount of albumen, no sugar or bile, no pus, few granular and hyaline casts. Physical examination disclosed all organs practically normal except prostate gland. The right and middle lobes of this gland were moderately enlarged and exceedingly hard. Sound in bladder showed no urethral stricture or stone. The scrotum was large and pendulous, with varicocele veins and slight hydrocele on left side; no scar on penis; no history or signs of any venereal trouble having ever been present. Op-

eration was performed August 3, 1903, under gas-ether anesthesia. A sound was introduced into the bladder as a guide, and a two inch median incision made in the perineum. While dissecting the tissues back, a small hole was torn in the rectum about three quarters of an inch above the anus. This was temporarily plugged with gauze. The right lobe was exceedingly hard, globular in shape and about one and one-fourth inches in diameter; the middle lobe was of equal consistency but not so large. The capsule was opened and the right and middle lobes removed by morcellation with long scissors and forceps. The left lobe being unaffected was not attacked. On account of the rectal tear it was thought best not to open the bladder or urethra. The gauze from the rectal wound was removed and it was sutured first by interrupted catgut tied in the rectum, and then a row of continuous silk. Wound was packed with iodoform gauze to control oozing and a few stitches put in perineal incision to close it partially. Patient stood operation well and recovered without shock. Suffered some pain in wound. Temperature and pulse showed no infection and bowels were not allowed to move till August 8th, five days after the operation. Stitches in rectum gave way and small amount of feces came through perineal wound. After a few days the amount of feces coming through wound increased. Patient had to be catheterized, as he could not void urine because the bladder seemed to be entirely without tone. A number 27 French sound could be readily passed into the bladder without meeting any obstruction. Patient seemed to have very little resistance and tissues healed slowly. By August 15th his general condition had improved very much, though he was suffering from rheumatic pains in the lower extremities. On August 18th I opened the fistula under cocaine. August 30th he passed a small stream of urine voluntarily, though about eight ounces of residual urine remained. A catheter was used to remove this. The voluntary urination continued and amount of residual urine decreased each day. There was still a small amount when the patient was discharged. On September 1st, suffering from rheumatism was quite severe, and left ankle, which had been swollen when patient first attempted to walk ten days after operation, began to grow worse. He was given salicylate of soda and this was changed after a few days to iodide of potash and colchicum. By Sep-

tember 7th rheumatism had been almost relieved and wound and fistula had completely healed; patient had full control over bowels and was able to urinate satisfactorily. September 8th patient was discharged in good condition.

Case 2. Mr. G. T. F., Pulaski City, Va., age 64 years, railroad man, married. Admitted to Memorial Hospital August 4, 1903. Family history of no significance. His previous health had been good. Lost right arm in railway accident. No history or signs of any venereal trouble. About a year ago he began making urine too frequently. This trouble gradually increased and was accompanied by burning pain during urination. There was also some mechanical difficulty in urinating, and after exposure to cold there was sometimes complete retention. The condition was growing steadily worse. When voluntary urination was possible it was so frequent as to disturb his rest materially. Patient seemed in very good condition otherwise. Urinary analysis showed urine of muddy yellow color, flocculent sediment on standing, specific gravity 1018, trace of albumen, no sugar, some epithelial and pus cells, a few hyaline casts, considerable amount amorphous phosphates. Physical examination showed all organs practically normal except prostate gland, which was markedly enlarged. Both lateral lobes were so large that it was exceedingly difficult to find their limits with the examining finger in the rectum. The middle lobe extended up so far that its upper limit could not be reached with the finger. The prostate was of rather firm consistence but not so hard as in the previous case. Residual urine about two ounces. Operation under gas-ether August 8th. A median perineal incision three inches long was made, extending to within three-fourths of an inch of the anus, a sound having been previously introduced into the bladder as a guide. A large varicose vein surrounded the membranous urethra. The capsule of the gland was exposed and incised. The operation was quite difficult, as the patient was rather stout and the prostate very large. However, by shell-ing out a piece and cutting it off with scissors, all of the median lobe, which constituted the main obstruction, and most of each lateral lobe were removed. While removing the median lobe, a hole was made in the prostatic urethra. Bleeding was quite free though not alarming. The tips of the lateral lobes could not be reached

and removed through this incision, but as only a small portion of these lobes was left, and the parts left were causing no obstruction, it was thought unwise to enlarge the incision in order to remove them. The operation could have been more easily effected by the "Y"-shaped incision as recommended and practiced by Young and by Senn. The wound was firmly packed with iodoform gauze to control oozing and partly closed with interrupted sutures of chromic catgut. During the night following operation there was considerable oozing and the wound had to be repacked. Urine drained freely from the wound. August 11th patient put upon urotropin three times a day. August 25th a few drops of urine were voided through the penis for the first time. Patient was able to control the urine. August 26th packing was left out and wound irrigated twice daily with salt solution. There was never any infection and temperature and pulse varied very slightly above normal during his entire stay in the hospital.

September 10th the wound was granulating nicely; there had never been the slightest infection. About half the urine came through the penis. The patient felt well though he urinated somewhat more frequently than normal. Had perfect control over urine. Discharged.

303 W. Grace Street.

IS STONE IN THE KIDNEY PRIMARILY A SURGICAL DISEASE?

By BENJAMIN K. HAYS, M. D., Oxford, N. C.,
Resident Physician Buffalo Lithia Springs, etc

At a recent meeting of one of the State medical societies a gentleman who is known in his state as a teacher, a writer and a clinician dismissed the subject of stone in the kidney with the statement "It is purely a surgical affection."

The gentleman had read a paper on "Nephritis," and in the discussion which followed, stone in the kidney was mentioned as a not infrequent cause of that affection. The causes and prevention of stone were pointed out, but the reader, holding that stone in the kidney was "purely a surgical affection" declared that the discussion had no bearing whatever upon the paper.

That a renal calculus may pass beyond the reach of medical treatment and render surgical aid imperative will be readily admitted by everyone; but it is the claim of the present writer that the formation of stone may (certainly in a great majority of cases) not only be prevented, but that an acute diagnostician will recognize the affection when it is yet at a curable stage, and if the proper treatment is employed the knife will not be called into requisition.

A brief study of the causes of calculi will readily suggest the means of their prevention. They may be formed in acid or in alkaline urine. In the former we find the uric-acid and oxalic-acid calculi; in the latter the phosphatic. Mixed calculi are not infrequent, due to changes in the reaction of the urine brought about by inflammatory processes.

The uric-acid stone is by far the most frequent, and is thought to have its origin in the uriniferous tubules. As a rule it is washed down into the calyces and, if it does not pass on through the ureter, forms an accumulation of uric acid sand or gathers around itself a nucleus of albumin, mucus, blood or epithelium threads and forms a stone in the pelvis of the kidney. The phosphatic stone is invariably associated with pyelitis.

The prime cause of the various forms of renal calculi has elicited much discussion, many ingenious theories have been advanced, and the final word is yet to be spoken on this subject. Practically, however, we may say that in persons of a lithaemic tendency, passing a reduced quantity of highly acid urine there is a precipitation of uric acid in the kidney and the result is a calculus. As a result of the calculus, or for other reasons, there may be pyelitis, the urine undergoing alkaline fermentation, and phosphatic deposits may be made upon the uric-acid stone.

Renal calculi is a very frequent affection. Renal colic is by no means rare, and it is probable that to every sufferer from renal colic there are many who pass uric acid sand unnoticed or permit a stone to remain unrecognized until chronic pyelitis or parenchymatous nephritis develops. A timely examination of the urine would have revealed the presence of pus or blood. Pain in the back, frequent headaches and attacks of acute indigestion should call for such an examination.

The patient is usually a high liver who leads a sedentary life. Constipation is fre-

quent and the urine is scant and highly acid. The treatment is clearly indicated by the symptoms and does not differ from that of lithaemia and other uric acid conditions. We must employ, (1) Dietetic treatment; (2) Exercise; (3) Laxatives, and (4) Diuretics.

The Diet should contain a minimum amount of nitrogenous food and carbohydrates in moderation. The patient should eat at regular intervals, never hurriedly, and always of well prepared food. Milk is not only one of the most useful articles of diet, but is also a valuable diuretic. Vegetables free from acids, white fish, chicken, eggs, butter, mutton, ham in moderation, toast, stale bread, oat-meal, hominy, rice and shredded wheat may be allowed. Avoid all forms of alcohol, highly seasoned food, fried dishes, salt meats, pies and sweets generally. It should constantly be remembered that quantity as well as quality of foods should be considered, and the amount taken should never exceed that which the patient is thoroughly able to assimilate.

Exercise in the open air must be insisted upon unless contra-indicated by the presence of such conditions as nephritis. Friction baths and woolen underwear will be found of great service.

Laxatives should be combined with diuretics. I have often noted that acute exacerbations of uric acid manifestations are associated with constipation, and even attacks of renal colic and constipation are frequently coincident.

Diuretics. Nathan S. Davis, Jr., in an article on "Nephrolithiasis" in Hare's *System of Practical Therapeutics* says:—"Medical treatment consists in making the urine alkaline and keeping it mildly so, in making with uric acid soluble compounds, and lastly in provoking free diuresis." The best known diuretic is water, and this must be so combined with laxatives and alkalies as to keep the bowels open and the urine alkaline. This is easily done by employing some of the well known mineral waters which possess these qualities. While there are many to be found on the market, my experience has been limited to the Buffalo Lithia Water, and since this is recommended by almost every recent writer on therapeutics in this country I shall have no hesitancy in speaking of it here. Highly charged with carbonic acid gas, it is easily borne by the stomach in large quantities, it is alkaline in reaction and renders the urine so, and is mildly

laxative. Just how far its action on stone in the kidney is due to the lithia which it holds in solution is impossible to say, but that it does exercise a specific action which the lithia tablets do not produce will be readily admitted by everyone. Under its use I have repeatedly seen large quantities of sand passed with the urine, while one patient alone passed, during the present summer, one hundred and eight small stones.

In speaking of the effect of mineral water upon renal calculi, Jas. K. Crook of New York, says (see *Hare's Therapeutics*):—"These good effects are produced in several ways: First, they aid in the correction of the constitutional vice which gives rise to the production of the concretions. Secondly, by their diuretic and diluent action they palliate the local symptoms of catarrh and inflammation. Thirdly, they are believed by many to aid in the breaking down and chemical decomposition and solution of the calculi, thus favoring their easy draining off with the urine." That the effect here claimed has been produced in some of my cases was proved by an X-ray examination. The stone was clearly seen before taking the treatment and was afterwards found to be absent.

As an adjuvant to the mineral waters Alfred Loomis had faith in the specific action of the various salts of lithia, but his chief reliance was in the natural lithia waters. In the hands of Nathan S. Davis piperazin has seemed to exert a solvent action upon uric-acid stones, but Hare and Osler have failed to obtain good effects from it. Whether medicinal agents will or will not dissolve stone in kidney may be still a question in the minds of some, but that the formation of stone may be prevented and small stones flushed out by proper treatment there is no room to doubt. The physician who sees and recognizes stone in the kidney in its early formation and employs the various means within his reach for cure need never turn his patient into the hands of a surgeon.

Doctor: "Do you know the effects of getting too much mercury into your system?"

Denny: "Yis, doctor; I'd be a thermometer."

Use of Pigskin Grafts on Extensive Granulating Surface in Case of Superficial Gangrene—Clinical Report.*

By J. HAMILTON BROWNING, M. D., Charlottesville, Va.,
Instructor of Clinical Surgery, University of Virginia, etc.

On December 8, 1902, there was admitted to the surgical department of the University of Virginia Hospital, a young white male, aged 22, with the following history: While riding on cow-catcher of an engine which was pushing a car, his thigh was severely contused as result of a "rear-end collision."

When brought to me twelve days after the accident, his condition was as follows:—Right thigh was dark green in color, very much swollen and very offensive, moist gangrene having extended over nearly the entire anterior, internal, and posterior aspect. An incision about two inches long on anterior aspect of thigh and one three inches long on posterior aspect afforded the only drainage for this extensive area. Patient's condition was one of marked sepsis. Temperature gave a diurnal variation from 97° F. to 104° F. Pulse 120, irregular, intermittent, and weak. Hectic flush on face; usually two chills in twenty-four hours, followed by profuse sweat, with marked exhaustion; bowels irregular; albumen in urine; mind clear.

On day of admission to Hospital as much of the necrotic area was removed at once as possible—at least two pounds—which was found to include skin, superficial fascia, fat and fascia lata, care being taken not to extend incision out far enough to open up new points of absorption.

Denuded surface was thoroughly irrigated with 1-3,000 formalin and dressed in wet formalin compresses of gauze of same strength, outer dressing being removed and wound irrigated every three hours. (Constant irrigation was not used, as the gangrene extended up so high that the position the patient would have had to assume in order to keep his body dry, would have been one of exhaustion).

Highly nutritious food—whiskey and strychnine—was ordered every three hours.

On December 16th, eight days after admission, wound throughout its entire extent gave a perfect picture of a dissection of the muscles on front and inner side of thigh and internal hamstrings, the fascia lata and fascia between

* Read by title at the meeting of the Medical Society of Virginia held in Roanoke, September 15-17, 1903.

muscles being entirely destroyed, even extending into Hunter's canal.

Only sound skin on thigh, from one inch below Poupart's ligament to within two inches of patella, being on its outer aspect, about five inches wide at trochanter major and three inches at external condyle, its only attachments, the underlying fat and fascia having been destroyed, and in this sound skin there was an incision about four inches long which, perhaps, saved it.

By December 23rd the wound was perfectly clean, so it was put up in dry dressing for first time, and the loose skin on outer side snugly bandaged so as to get it to unite to the new granulations which were now rapidly covering the thigh and obscuring the individual muscles.

The question of paramount importance at this time was that of skin grafting. The patient's general condition, though greatly improved, was such that autografting had to be eliminated for such an extensive area. Heterografts were not obtainable, as there was by actual measurement 225 square inches yet to be covered, although the skin edges had closed in considerably. So zoografting was decided on by exclusion.

A two-months old pig was secured and prepared by Dr. Don Peters, the house surgeon, in the following manner, on January 3d:

First, the pig was thoroughly washed with warm water and green soap; then entire body cleanly shaved; then another thorough washing and a green soap poultice applied and allowed to remain on for four hours. Then another scrubbing with green soap, alcohol, and sterile water was given and a bichloride mercury poultice, 1-3,000, applied and this was left on for ten hours.

The wound had been daily irrigated with 1-6,000 bichloride and 1-3,000 formalin solution; yet the dressings after remaining on for 24 hours would be discolored by bacillus pyocyaneus; however, the granulations were not large and of a healthy, pinkish hue.

On day of grafting, above irrigation was used, followed by normal salt irrigation. The toilet of the physicians and nurses was same as for a laparotomy.

The pig was then anesthetized with chloroform and kept alive. Then after thorough rinsing with normal salt and applying sterile towels to protect the area prepared, thin shav-

ings of skin as large as possible were removed with a razor and applied over the middle third of the granulating surface, each piece being firmly pressed down by a nurse with a gauze saturated with warm normal salt solution, while other pieces were being removed; the grafts were not over-lapped but put as close as possible together and to edges of the skin. The grafts were then retained in place by *one layer of plain sterile gauze* applied snugly and smoothly around thigh and pinned. This I consider far preferable to the time-honored rubber tissue, as it allows irrigation through the meshes of gauze without disturbing the grafts. The wound was dressed with a liberal gauze dressing, moist with normal salt solution; no cotton was used, as it is hard to remove when wet.

On third day all dressing was removed, except the one layer of *retaining gauze*, and wound and grafts thoroughly irrigated with normal salt, care being taken not to give fountain syringe more than one foot elevation for fear of disturbing grafts.

Owing to the profuse serous discharge and the presence of the bacillus pyocyaneus, the dressing was now renewed daily.

On the sixth day the retaining gauze was removed and the grafts looked so healthy that we were encouraged to graft again on following day.

The first graft began to exfoliate on the twelfth day, down to and including the pigmented layer, leaving a delicate layer of epithelium so thin that for some days we thought the grafting a failure; but the microscope demonstrated the presence of epithelium.

On January 16th the third and last grafts were applied and dressed in same manner as first.

The entire granulating surface was not grafted at once for following reasons:

First, I had never seen pigskin, or any other kind of zoograft used before.

Second, the extensive area to be covered would have made the operation too long.

Third, I did not know what effect the bacillus pyocyaneus would have upon wound and grafts.

By January 26th it was evident that at least 80 per cent. of grafts had taken, except just below Poupart's ligament where they had been destroyed by slipping of bandage. This small area was, however, soon covered by freeing one

end of a piece of inverted skin just below Poupert's ligament and reflecting it down thigh on area not covered. After this date, wound was dressed every third or fourth day, using 1-10,000 bichloride, followed by normal salt and wound put up dry, pulverized oxide zinc and prepared starch being used as dusting powder.

Patient discharged on March 17th, with delicate skin yet to harden over an area about 3x4 inches.

In May I received a letter from my patient, Mr. J. J. P., saying he had entirely recovered, stood a life insurance examination, and resumed work.

Proceedings of Societies, Etc.

Richmond Academy of Medicine and Surgery.

Regular meeting, September 22, 1903, Dr. William F. Mercer, president, in the chair; Dr. Mark W. Peyser, secretary and reporter.

Dr. M. D. Hoge, Jr., read a paper entitled *Urinary Analysis in Chronic Bright's Disease*. (See page 320, Oct. 9 issue).

Dr. William S. Gordon read a paper entitled *The Terminal Symptoms of Chronic Bright's Disease*. (See page 321 Oct. 9 issue).

DISCUSSION.

Dr. C. M. Hazen said that the subject is important because of the organ involved the complications and the results, and also because of the prophylaxis, especially from the standpoint of the uric acid diathesis, malaria and the care of the skin. Concerning malaria, there are to be considered not only the toxins of that disease, producing either the parenchymatous or the interstitial form or a mixture of the two, but also their effect on the liver and nitrogenous waste elimination. He had been led to believe that the perfect human body would not form an appreciable amount of uric acid; as it was, excessive uric acid is a cause of nephritis. The subject is interesting also, because of the difficulty in treating it; and lastly, because today it had become a surgical disease. On the physiology of the organ are based the difficulty of diagnosis and treatment. It is almost hopeless to lay out a line of treatment that we can affirm would be successful, because so much is hidden from us.

Interstitial nephritis is due to overgrowth of connective tissue from proliferation of round cells. These not undergoing resolution, become fusiform, contracted and crushed out the kidney cells—those farthest away suffering least and last, but eventually—it might take fifteen or even twenty years—practically all dying from lack of nourishment. The parenchymatous form begins with cloudy swelling followed by destruction and death.

Medicinally, treatment is difficult. If the skin is sufficiently cared for and the inroads of uric acid and other toxins avoided, a great deal has been done, particularly in the interstitial form. Osmosis is to be controlled; Widal said that by withholding sodium chloride, he could reduce the symptoms of parenchymatous inflammation. Blood pressure was to be adjusted; and finally, surgical aid was to be invoked. Current literature showed that decapsulation was of benefit, and he believed that eventually, it would be proven that it would cure many cases of either the interstitial or the parenchymatous form. Sometimes it is sufficient to simply run the needle through, tearing the capsule and allowing it to stretch, thus relieving pressure. The question arises whether to remove the capsule or merely incise it. It has not yet been proven that a collateral circulation is established after decapsulation.

Dr. J. Shelton Horsley said, regarding the Johnson experiments, that the kidneys of dog and man differ. In the dog there is little or no fatty capsule, and the posterior peritoneum is always adherent to the true capsule from which it is difficult to strip without tearing. In the experiments, too, the kidneys were not pathologic. These facts might explain why no collateral circulation was established. Edebohls had reported at least one autopsy in which collateral circulation had been established. If he were affected with the disease, and the ordinary routine treatment had been of no benefit, he would submit to the surgical measure, having the entire capsule removed. The operation was of no serious danger, and had certainly produced brilliant results in Edebohls' hands, and he believed that it had a brilliant future.

Dr. Gordon, concluding the discussion, agreed with Dr. Hazen regarding causation, especially as to the influence of liver catabolism. The health of the kidney bore on that of the liver, so that we often see the good effect of occasionally helping the latter. He believed

that a large majority of even the parenchymatous cases are due to internal changes, as in the blood, and if a healthy urine could be maintained, the kidney could usually take care of itself. Especially in the interstitial form, uric and oxalic acids and other poisons irritated the delicate epithelium resulting in the formation, first, of mucous, and later, when the disease was engrafted, of hyaline and granular casts. He did not deny the existence of outside causes, e. g., alcohol, prolonged seaside bathing producing chilling of the surface, etc. Regarding the use of medicines, he was not a skeptic, but when the disease was established, much could not be done; the treatment was preventive. There were conditions, however, that could be benefited. The treatment of a dilated heart, of excessive tension and of dropsy, the regulation of food, etc., could so prolong life that patients only died from intercurrent disease. Iron, digitalis, nitroglycerin, bichloride of mercury, iodide of potassium, all used intelligently, would often bring about good results. Regarding surgical measures years ago Reginald Harrison, of Birmingham, England, undertook to split a kidney in which he suspected the existence of stone, but found none; but the cases, which were early parenchymatous or interstitial nephritis, recovered. Whether or not Harrison continued to operate, Dr. Gordon did not know, but he thought Edebohls had gotten the clue from him. He could understand how the operation would relieve, but for himself, he would prefer the use of leeches first.

Listerine.—Some professional members of the Association of Analytical Chemists of the Pasteur Institute of Paris have been studying "Listerine," named after the great English surgeon. It is a mixture of the essential oils of thyme, eucalyptus, baptisia, wintergreen and mint. It has relatively no toxic properties peculiar to these oils; but the Parisian savants have brought out the important fact that the admixture of oils is much more potent than any one of them singly. It attacks more than one joint in the bacterial armour. Carbolic acid—used so much mainly because it is the original antiseptic employed by Lister—is 146 times as toxic as Listerine.

Analyses, Selections, Etc.

Abdominal and Pelvic Surgery Without Ligatures; Electro-Thermic (Heat and Pressure) Haemostasis.

Andrew J. Downes, A. M., M. D., of Philadelphia, Pa., Gynecologist to St. Mary's Hospital, in his paper read before the Medical Society of the State of Pennsylvania, during the session at York, September 22-24, 1903, called attention to the early development of the control of operative hemorrhage, referring briefly to the various methods that have succeeded one another, including torsion and angiotripsy, and gave objection to all of them. He called attention also to the work of Baker Brown, as far back as 1860, Keith of Edenburg, and Skene of Brooklyn, who controlled hemorrhage in ovariectomy by an application of a heavy forceps to the pedicle against which the actual cautery was applied to obtain heat. This was the origin of heat and pressure in the control of hemorrhage. Skene of Brooklyn, after his experience with this crude process conceived the idea, after having seen the electric flat iron, of including within the blades of the forceps the pressing medium. He made the first electro-thermic haemostatic instrument.

The essentials in this method of hæmostasis are first, and of greatest importance, pressure and second heat. The instruments of Skene were made in such a way as not to render practical the application of either sufficient heat or pressure and their use was extremely limited.

Dr. Downes then described his own instruments which have now reached a state of perfection—the heating medium causes the blade to become rapidly hot and the blade is so constructed as to have all the tensile strength of a non-electrical instrument. The blades are so constructed that hard solder is not used in the manufacture and thus the temper of the instrument is not interfered with. The principle involved in the method is essentially as follows:—Pressure approximately that of a medium sized angiotribe is applied to the tissue to be hæmostased and the compressed ribbon thus formed is rapidly submitted to a temperature of not under 212° F, thus coagulating and agglutinating under pressure its albuminous constituents. In addition the heat travels a short distance beyond the area compressed into the adjacent tissue and causes a shriveling of

the intima of the blood vessel leading into the compressed ribbon. Clotting therefore occurs a considerable distance beyond the ribbon. The possibility of hemorrhage after proper technique is inconceivable.

He exhibited the instruments and the various motors and transformers for controlling the current. The instruments are made with straight and curved blades; the blades are $2\frac{1}{4}$ inches long and in width are $\frac{1}{4}$, $\frac{3}{8}$ and $\frac{1}{2}$ inches.

For the alternating current a simple light weight transformer only is required. For the direct or continuous current a motor in connection with the transformer is required.

The instruments and the cable are perfectly sterilizable by boiling. A feature lately introduced is a foot braker in connection with the motor for controlling the current, pressure of the foot letting the current into the instrument or stopping it. The operator is thus absolutely in control.

A shield made of metal with small points to prevent surface contact, make it possible to use the blades of the electro-thermic instruments anywhere, the shield remaining cool for two minutes when surrounding the blades of the angiotribes. The equipment is completed with a cautery knife and a so-called electro-thermic heater for application against the tips of any ordinary artery forceps. A description for the use of the artery forceps heater is as follows:—"For small bleeding points met with in incisions, in amputation of the breast in neck operations or any place where ordinarily fine ligatures would be required, I have devised a platinum loop called an "artery forceps electrotherm." This little heater at a bright heat applied to the tips of the ordinary hæmostatic forceps will transmit sufficient heat in five seconds to control any small blood vessel within their grasp. The tip of the hæmostatic forceps against which the heater rests may have a slight groove in it as a point of purchase for the Platinum Loop. This little heater replaces a number of perishable small electro-thermic forceps.

The platinum (the heating medium in these instruments), the cautery knife and the heater are the same in weight and require about the same maximum current, 60 amperes. This is a higher amperage than has ever been used in electro-thermic instruments but the heat developed in a piece of platinum requiring this amperage causes our blades to more rapidly heat and to be more servicable than where less

current is used. There is also less danger of burning out the Platinum. The same current being required by all the instruments including the cautery knife and heater makes it possible to dispense with a meter. The current that will render incandescent the cautery knife and heater is approximately 60 amperes. This is an indication therefore, that our rheostat is adjusted to the proper point although the blades will take more current. For each operating room therefore, the current can be adjusted so that the cautery knife is brought to a bright heat and without change this current can be used. The practical way therefore, without a meter of judging the proper amount of current necessary to heat the instruments is to gradually turn on the rheostat of the transformer until the platinum in the cautery knife or in the heater is a bright red. For each individual operating room when this point is reached on the transformer it can be set and never changed, the current being switched in from the electric light socket or a foot braker may be used so that while working we can turn the current in by the pressure of the foot for the required time.

The current that heats the knife, as just described, turned into the angiotribes will cause water placed on the pressing surface of the blades to boil in 10, 15 and 20 seconds for the different widths, $\frac{1}{4}$, $\frac{3}{8}$ and $\frac{1}{2}$ inches. In using the instruments therefore, it must be remembered that this amount of time, 10, 15 and 20 seconds, is used before the blades become sufficiently hot and that we should allow from 10 to 30 seconds after this while the instruments are applied to the tissues to be hæmostased. The current therefore, for the various sizes should act from 20 to 50 seconds. It will be found however, in practice that the narrow $\frac{1}{4}$ inch blades can be used on the meso-appendix on the mesentery or on any thin tissue in about 12 seconds. As one becomes accustomed to the method it will be found unnecessary to count or keep time, for the cooking of the tissues under our eyes lets us know when we have sufficient heat.

The operator should always remember that heat alone without the proper amount of pressure between the blades will not control blood-vessels, and therefore, the angiotribes should be used at maximum pressure. There is a minimum amount of time that the instruments should be used with the proper amount of heat and pressure, but no harm occurs if a little

more time than is necessary is consumed by the heated blade. When one has become accustomed to using this method it will be found possible, with the rheostat set at the proper place to have, in each operating room, the transformer or motor transformer out of sight, under the operating table, with the cable connected with it and running to the edge of the operating table, and with the short sterilized coupler to the first part of the cable at the edge of the operating table. For each operation the instruments and this short coupler cable can be re-sterilized. I have lately found a foot braker very valuable. It dispenses with an assistant, the operator being in absolute control—the current being turned on when required by pressure of the foot.

The following rules for using these instruments were given:—

The pressing surface of the blades must be smeared with sterile oil before each application.

The field should be dried and freed from blood and the surrounding tissues protected from the outer surfaces of the blades by gauze or preferably by my shield.

After each removal of the blades from the hæmostased track they should be cleaned to remove all charred and adhering blood and the pressing surfaces re-oiled.

Too short an application should be avoided. No error is committed if the time is some seconds longer than required.

The shield should be applied after the adjustment of the angiotribe and be removed last so that the compressed hæmostased ribbon can be examined before letting it drop from view.

Types of the various operations were briefly described, as for ovariectomy, salpingo-oophorectomy, hysterectomy, appendectomy, and for operations on the stomach, intestine and omentum.

In hernia and hemorrhoidal operations and in the freeing of intra-abdominal adhesion.

Its especial value in malignant diseases was especially referred to as was also its use in stomach and intestinal surgery.

In stomach operations the following was given:—

In operation on the stomach there is generally, on incision into the wall of the viscus, free hemorrhage from the mucous membrane. This can be prevented by using the blades of the angiotribe to agglutinate the various layers in

the wall of the stomach. Incision in the ribbon thus produced is bloodless. In a variety of operations this method can be used. It should be especially valuable in gastro-enterostomy in which operation the following procedure is suggested. The portion of the stomach that is to be approximated to the intestine is grasped double in the bite of the angiotribe and the intestine that is to be approximated to it is also grasped double. The hæmostased ribbon thus made in a double wall of the viscus on separating the walls will open to twice its length as clamped. The thus made ribbons can be opened before suturing the surfaces that are to be joined or they can be opened just before the completion of the suturing, or better, they may not be opened at all with the certainty they will slough open in 30 hours. In pilorectomy this method of hæmostasis and occlusion should be especially valuable.

A number of operations including gastro-enterostomy have been performed on dogs.

A case of intestinal re-section was cited in which section of bowel was made and union effected by suture without seeing the mucous membrane and, therefore, without any possibility of contamination from the contents of intestines.

A case of hysterectomy for tuberculosis on a moribund patient was cited, the patient weighing at the time of operation 80 lbs. and weighing now 141 lbs.

Dr. Downes reported in his own work

- 30 Hysterectomies,
- 100 Salpingo-oophorectomies,
- 100 Appendectomies,
- 8 Ovariectomies,

Some myomectomies, hernia, breast and hemorrhoidal operations. He stated that he had not used a ligature anywhere during the last two years.

He stated that 33 American surgeons are now equipped with these instruments, of whom the following have written reports:—

- Dr. Keefe of Providence, R. I.,
- Drs. Hirst and Noble of Philadelphia, Pa.,
- Dr. Bovee of Washington, D. C.,
- Dr. Goldsphon of Chicago, Ill.,
- Drs. Ricketts, Zinke & Wernig of Cincinnati, Ohio.

In addition to the work of these men we have personal reports from a number of others, including Drs. Oschner, Murphy and Furgerson

of Chicago, Dr. Werder of Pittsburg, and others.

The following number of operations have been collected:—

- 80 Hysterectomies,
- 200 Salpingo-oophorectomies,
- 200 Appendectomies,
- 20 Ovariectomies,

1 Nephrectomy and a number of other operations. The list given includes only a part of the operations that have been performed with these instruments.

The hysterectomies include 16 for cancer and one for carcinoma.

In conclusion the paper of Dr. Downes called attention to the fact that a pumper technique is essential to the method and that it is easily acquired.

Case of Filiaris Sanguinis Hominis in Maryland.

Dr. Wm. F. Lockwood, Baltimore, (*Md. Med. Jour.*, Oct. 1903) says that the worm has been frequently found in Australia, South America, China, India, Africa and the West Indies. But the occurrence of a case of filiaris in a State North of the tropical countries is important enough to be recorded. Dr. Opie two years ago recorded (*Amer. Jour. Sciences*, Sept. 1901) a case occurring also in Baltimore.

Dr. Lockwood's case: J. de S., age 19, native of British Guiana, recently from Colon, admitted to Baltimore City Hospital Aug. 19, 1902. On voyage from Colon, he and seven other sailors were attacked, within two days of each other, with fever; two died on reaching Baltimore. Patient's family healthy. He had swelling of proteid (?) glands, with suppuration at 5 years of age, and on four subsequent occasions, always requiring incision through mouth for evacuation of pus. He had a fever seven years ago which lasted a month or more. He denied having had syphilis, but had repeated attacks of gonorrhea, complicated once with suppurating inguinal glands.

Examination showed urethral discharge with slight enlargement of inguinal glands. Constipation, extreme weakness, and aching of bones when admitted. Area of liver dullness normal. Splenic dulness increased, and spleen readily palpable. Repeated blood examinations for malaria negative, but afterwards numerous estivo-autumnal organisms were found. Just after patient's admission, 9 P. M., temp.

102.8°, examination showed numerous filaria. These were constantly present in subsequent blood examinations until Aug. 21, when their absence was noted. The patient was out of bed for the first time and had been moving about before the examination. But the next day, the blood specimen being obtained while he was in bed, filarias were found in abundance. On Aug. 23, patient going about ward, and no filaria found. Patient left hospital to go aboard ship for return trip. Quinine was withheld until Aug. 17 when it was given by mouth and hypodermically to combat malarial poisoning. Urethritis was treated locally with 2 per cent. solution protargol.

To preserve the species, filaria Bancrofti, an intermediate host is necessary, and the mosquito harbors the embryo in its tissues. Both the malarial mosquito, anopheles, and the field mosquito, culex, act as hosts for the embryos. These embryos penetrate the stomach wall of the mosquito, and finally enter the proboscis of the mosquito. This mosquito by its sting, infects the human body, and the adult worms enter the lymphatic circulation, where embryos are reproduced. The adults never leave the lymphatics, but the embryos enter the blood currents, especially during periods of rest on the part of the patient. They can be easily observed on microscopic examination. Adult worms occlude the lymphatics and produce stasis of the lymphatic fluid. This produces the lymph scrotum, elephantiasis, various dilated glands and lymphatics, and through rupture of the lymphatics, causes chyluria, chylous ascites, and chylous hydrocele.

In Lothrop and Pratt's case (noted *Jour. Amer. Sciences*, Nov. 1900) in a young man in Boston, age 22, the spermatic cord, and globus major of the epididymis were greatly enlarged from dilatation and thickening of the lymphatics.

New Orleans Polyclinic.—Seventeenth annual session opens November 2, 1903, and closes May 28, 1904. Physicians will find the Polyclinic an excellent means for posting themselves upon modern progress in all branches of medicine and surgery. The specialties are fully taught, including laboratory work. For further information, address, New Orleans Polyclinic, Post-office Box 797, New Orleans, La.

Extensive Brain Injury Without Impairment of Intellectual Faculties.

Dh. Walker Keate, Nacozari, Sonora, Mexico, gives (*Med. Rec.*, Oct. 17, 1903) details of an accident near his place on May 18, 1903. A miner, age 40, was preparing to spring a hole with dynamite, in which he had $6\frac{1}{2}$ sticks of giant powder inserted. They accidentally exploded while his face was over the hole. When Dr. Keate reached him two hours later, pulse 30 per minute and very weak. Eyes were blown out; skin and muscles and forehead were partly off; with the anterior portion of the skull cap turned back over the parietal bones. Orbital plate of frontal bone (roof of orbit) was blown into the brain, and the brains exuded through opening into cheek. A hole was in frontal bone about size of a silver dime—located at about center of frontal—through which brains exuded. Brain membranes—dura and pia mater and arachnoid—as also frontal lobes of brain, were badly lacerated. End of nose was badly cut; face and lips badly burned with powder and literally filled with small rocks and dirt.

After trephining to make a larger opening and to smoothe ragged edges, the doctor removed from the brain twenty small stones and several pieces of bone besides considerable dirt. Most of the foreign bodies were located at a point corresponding to anterior fontanelle, deeply buried in the brain. A large piece of bone corresponding to roof of orbit was extracted from brain through opening in forehead.

Amount of cerebral matter which exuded, weighed an ounce, but the patient has never for one moment been unconscious. His mind has been perfectly clear. He readily recognizes his friends when they speak to him, answers questions intelligently and describes accurately the details of the accident. He has never complained of pain, and says the anterior portion of the head feels paralyzed. Appetite is and always had been fairly good.

During the first two weeks, his temperature ranged between 100° and 103° ; but during the last two weeks, it has been practically normal. Patient has been able to get up every day since the accident, and locomotion is good. Just a month after the accident the patient was sitting in a rocker on the porch in the fresh air, chewing tobacco. Both eyes are completely destroyed.

Book Notices.

Diseases of the Ear. A Text-Book for Practitioners and Students of Medicine. By EDWARD BRADFORD DENCH, Ph. B., M. D., Professor of Diseases of the Ear in the University and Bellevue Hospital Medical College, etc. *With fifteen plates and one hundred and fifty-eight illustrations in the text.* Third edition, revised and enlarged. New York and London: D. Appleton & Co. 1903. 8vo. Pp. xxv-718. Cloth, \$5.00; sheep, \$6.00.

A complete revision of a large portion of this work has been made necessary by the many advances of otological surgery during the past few years. Especially does this apply to those chapters devoted to the operative treatment of chronic otitis media, and to the various intracranial complications of middle-ear suppuration. The technique of all major operations has been fully given—an omission made in former editions. A number of new plates, as well as photographs of instruments of recent device, have been added. The author is one of the leading otologists and his book is, therefore, to be considered authoritative; and as such it will be useful in the library of the ear specialist, or as a reference book for the general practitioner. We believe, however, that it is entirely too large for the college student as a textbook.

Hand-Book of Diseases of the Eye, and Their Treatment. By HENRY R. SWANZY, A. M., M. B., F. R. C. S. I., Surgeon to the Royal Victoria Eye and Ear Hospital, and Ophthalmic Surgeon to the Adelaide Hospital, Dublin; ex-President of the Ophthalmological Society of the United Kingdom. Eighth Edition, Revised. With 168 Illustrations and Zephyr Card of Holmgren's Tests. Philadelphia: P. Blakiston's Son & Co. 1903. Cloth. 12mo. Pp. 580. Price, \$2.50 net.

The author jumps right in and begins by telling how lenses in trial cases and spectacles are numbered; then he speaks of normal refraction and accommodation, the sense of sight, field of vision, etc. Then comes a chapter on abnormal refraction and accommodation—hypermetropia, myopia, astigmatism, anisometropia, and anomalies of accommodation. Chapter 3 deals with the use of the ophthalmoscope. These first three chapters the authors tells the student he should read "before or immediately on joining the Ophthalmic Hospital or Depart-

ment." Beginning with chapter 4, the various diseases are treated, starting with those of the conjunctiva. There is not the usual chapter on anatomy of the eye-region. Something in the make-up of the book reminds us of the plan of some teachers of modern languages—the scholar is taught the alphabet, and is then almost immediately given short every-day sentences to master. Upon learning these, he is given sentences that are longer and longer, until finally he knows the subject in a very practical way. As a reference book, Swanzy on *Diseases of the Eye* is good, but as a text-book for students we like it better.

Compend of Anatomy (No. 1). By SAMUEL O. L. POTTER, M. A., M. D., M. R. C. P., London, formerly Professor of Principles and Practice of Medicine in the Cooper Medical College of San Francisco, etc. *Seventh Edition, Revised and Enlarged.* With 138 Wood Engravings; also Numerous Tables and 16 Plates of the Arteries and Nerves. Philadelphia: P. Blakiston's Son & Co. 1903. Cloth. 12mo. Pp. 372. Price, 80 cents net.

Compend of Diseases of the Skin (No. 16). By JAY F. SCHAMBERG, A. B., M. D., Professor of Diseases of the Skin, Philadelphia Polyclinic and College for Graduates in Medicine, etc. *Third Edition, Revised and Enlarged.* With 106 Illustrations. Philadelphia: P. Blakiston's Son & Co. 1903. Cloth. 12mo. Pp. 291. Price, 80 cents net.

These little books—like the others of their class—are designed for use by practitioners and students, not only for hasty reference when time is too limited for extended study, but also to furnish a rudimentary knowledge of the subjects treated. Many of these compends seem to be of real value—not alone for their brevity in making statements—but, too, because of the way in which the various authors get down to their work, and give good, solid facts, eliminating long and tiresome minutiae. However much such things may be necessary in large books for specialists and practitioners who wish to investigate regarding the little particulars of their cases, such details are not wanted when one is in a hurry and only desires to refresh his memory as to the leading points sought.

The two compends herewith presented are excellent little books of their kind. Dr. Potter's *Anatomy* in its various editions is about twenty years old, and needs no special introduction. It seems to improve with age. Dr.

Schamberg's *Diseases of the Skin* is a much younger member of the series—in its third edition. It has already proved itself a valuable adjunct, and is worthy of the fullest consideration.

Practical Medical Series of Year-Books. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Issued monthly. Under the general editorial charge of GUSTAVUS P. HEAD, M. D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Vol. VIII. *Materia Medica and Therapeutics, Preventive Medicine, Climatology, Suggestive Therapeutics, and Forensic Medicine.* Edited by GEORGE F. BUTLER, Ph. G., M. D., HENRY B. FAVILL, A. B., M. D., NORMAN BRIDGE, A. M., M. D., DANIEL R. BROWER, M. D., and HAROLD N. MOYER, M. D. July, 1903. Chicago: Year Book, Publishers, 40 Dearborn street. Cloth. 12mo. Pp. 326. Prices of volume, \$1.50; of series, \$7.50.

Ten of these little books are published each year—practically one a month—and are designed to cover the whole field of medicine and surgery with a view to presenting commendable points that have appeared in the literature during the year just preceding. The various subjects considered are given in easy reading abstract-form—sufficiently full for a working basis, though references to the articles quoted are supplied in every case. This volume—like those of the series which have been issued before—will be found useful, filling in the gaps which have grown since the date of issue of the various standard text-books to be found in the individual medical library.

Manual of Diseases of the Eye. For students and general practitioners. By CHARLES H. MAY, M. D., Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, Medical Department, Columbia University, New York, etc. *Third Edition.* With 275 Original Illustrations, including 16 Plates, with 36 Colored Figures. Wm. Wood & Co., New York. 1903. Cloth. 12mo. Pp. 410. Price, \$2.00 net.

The author—in the preparation of this third edition—has adhered to his original plan of presenting a book for the student and general practitioner, having made such additions as were necessary to keep it up-to-date, and striking out what was not wanted, thus enabling him to keep the volume at about its original size. The fundamental facts of ophthalmology

and all that is essential to this branch of medicine are given, it apparently having been kept well in mind that the book was intended especially for those who are not specialists. Excessive detail, extensive discussion, and lengthy accounts of theories and rare conditions are omitted as not coming within its scope. That the book has met with decided approval may be judged by the fact that the first edition appeared in August, 1900; the second edition came out in September, 1901, and was reprinted the following month, and then again in July, 1902; and now the present edition appears—making a total of practically five editions in about three years.

Editorial.

Georgia State Board of Health.

At the first meeting after the establishment of this State Board of Health, held September 10, 1903, Dr. Willis F. Westmoreland, Atlanta, Ga., was elected President, and Dr. H. F. Harris, Atlanta, Ga., Secretary.

Chair of History of Medicine.

According to reports, a Professorship of the History of Medicine is to be established in the University of Maryland, and Dr. Eugene F. Cordell, of Baltimore, is to be the Professor. The history of medicine is a matter too much neglected in the curricula of our Colleges, and we trust this initiative step on the part of the University of Maryland will be followed by like professorships in the best of our medical colleges.

Serum-Therapy,

In the form of a symposium, has been selected as the subject for general discussion during the thirty-fifth annual session of the Medical Society of Virginia, to be held in the city of Richmond during the latter part of the fall of 1904. Dr. Charles R. Grandy, Norfolk, Va., has been chosen as leader, and Drs. Ennion G. Williams, Richmond, Lewis G. Pedigo, Lehighwood, Va., and A. B. Greiner, Rural Retreat, Va., have been elected to take parts in the symposium. It is not intended that the selection of

the parties named shall in any measure prevent other Fellows of the Society from preparing papers on any branch of the broad subject selected. On the contrary, the contribution of any such papers will be assigned a proper place in the program of the session in connection with the symposium.

Union of the Two New York State Medical Societies Proposed.

At a special meeting, October 1, of the New York State Medical Association, resolutions were adopted looking to the union of the medical organizations of that State into one State Society. A committee of five was appointed to do whatever "is necessary and expedient to bring about such a union in a just and equitable manner." This committee is empowered to confer, co-operate and unite with a like committee from the Medical Society of the State of New York to effect a union of the said societies.

Another Sanitarium for Lung Troubles for U. S. Army Officers and Men.

The Colorado Medical Journal, September, 1903, says: There is good prospect that the big Montezuma Hotel at Las Vegas Hot Springs, (about to be closed by the Sante Fe, because of lack of patronage) will be turned over to the U. S. Government and be used as an Army Sanitarium, especially for officers and soldiers afflicted with pulmonary complaints. The Surgeon-General of the army [who has shown commendable foresight and interest in the better care of the army] favors the establishment of another sanitarium in the Southwest, and believes that the big hotel, with a few improvements, would be the place.

The Miami Medical College, Cincinnati, O.

Recently absorbed the Laura Memorial College, and beginning October, 1904, will admit women students. This coeducational arrangement, it is said, is merely in the nature of an experiment, and can be revoked in case of failure.

The Portsmouth, Va., Naval Hospital.

The contract is out for the addition of two modern hospital wings in the rear of the present building, and these wings will be connected by a third. Heretofore, it has had 200 beds; in its enlarged shape it will contain 500 beds.

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Original Communications.

THE THERAPEUTIC USES OF THE X-RAYS WITH REPORT OF CASES.*

By ENNION G. WILLIAMS, M. D., Richmond, Va.,

Professor of Pathology, Medical College of Virginia; in charge of
X-Ray Department of Memorial Hospital, etc.

History.—In December, 1895, Wilhelm Konrad Röntgen, Professor of Physics at the University of Wurzburg, announced to the Physico-Medical Society of Wurzburg the discovery of a new form of radiant energy, which he termed the X-Rays. These rays could penetrate substances in varying degrees—the penetration varying roughly in proportion to the density of the material.

The discovery was immediately published throughout the civilized world, and its value to surgery was quickly appreciated and utilized. From that time the use of the rays became general in the diagnosis of fractures and in locating foreign bodies; and later, since the apparatus has been improved, the rays have been used to locate renal and vesical calculi and in the diagnosis of aneurisms and consolidated areas in the lungs, as well as other pathologic conditions which can be revealed by a difference in the density of tissues, as the necrosis of bone. During their use for these purposes their stimulating and irritating properties were discovered, and in some instances at a severe cost to the patient and operator.

These unfortunate accidents suggested their use for the destruction of diseased processes.

In 1897 Dr. Freund reported to the Vienna Dermatological Society a case of *nævus pilosus* in which the hairs fell out and an erythematous rash was produced. In 1898 Dr. Kummel reported to the German Society of Surgery two cases of lupus almost cured; and in the spring of

the following year Dr. Philip M. Jones, of San Francisco, reported two cases of lupus cured. In 1900 numerous reports were made of various skin diseases healed under the influence of these rays, and since then the reports of successful cases have continued to appear in greatly increasing numbers.

It was fitting that the nineteenth century, which gave to surgery such epoch making discoveries as anæsthesia and asepsis, should not close without giving similar contributions to medicine. Its last decade marked the birth of two therapeutic agents—Serum- and Photo-Therapy, which in their infancy give promise of revolutionizing the treatment of disease ere another century shall have passed.

Before the exact value in therapeutics of the new form of radiant energy manifested in the X-rays shall be determined, several years must elapse, and many experience meetings must be held of those experimenting with it. Even at the present time, however, one cannot help being enthusiastic when he sees severe and continuous suffering and pathologic conditions heretofore considered hopeless gradually fade away as if by magic under the influence of the faint glow from the glass bulb. The points yet to be determined with more precision are the physiological action of the rays upon the tissues of the body, and a more accurate knowledge of the apparatus, and the proper combination of the several controlling and variable factors concerned in producing a desired result.

Theories of the Physiological Action.—There are various theories as to how the effects of the rays are brought about. The first is the bactericidal theory—namely, that the rays destroy the germs present in the tissues. When the cause of the pathological process is thus destroyed, nature by its reparative changes absorbs or throws off the diseased tissue and replaces it with healthy tissue.

Some of the best observers differ as to the bactericidal properties of the rays. The re-

*Read before the Medical Society of Virginia during its thirty-fourth annual session, held at Roanoke, Va. September 15-17, 1903.

sults of their experiments show a strange variance. In my own experiments with the *staphylococcus pyogenes aureus* their growth was inhibited with comparatively weak rays and they were destroyed with intense rays—the death point varying with the controlling factors.

Cauterant.—Another theory is that healing is due to a caustic effect—i. e., that the rays produce a necrotic dermatitis destroying the tissues, normal and pathological, and the lesion is then repaired in the usual way with normal tissue. That this is not the only way is proven by the fact that so many cases heal without any apparent dermatitis and certainly without necrosis.

In the report of cases to follow are instances of healing by the two processes—that is, with and without necrotic inflammation. Another proof that the cauterant action is not alone responsible for the good results is the beneficial influence exerted by the rays in many deeply seated growths.

Aberrant Protoplasmic Activity.—Another theory which I quote “assumes that malignant degeneration is simply a departure from the normal of developmental protoplasmic activity, resulting in a reversion of the normal cell structure to a more primitive type, dependent upon deeply seated constitutional idiosyncrasy and local irritation; and that the character of the vibration period, wave length and amplitude of the manifestation of energy constituting X-Ray light possesses the power so to influence molecular motion as to overcome the aberrant tendency of cell development and restore the normal characteristics of the formative function;” or in other words, that cancer cells are cells which have strayed from the normal course of development by a change in their protoplasmic activity and that the rays, by their peculiar radiant energy, overcomes this abnormal tendency.

Selective and Destructive.—The other and to me the most attractive of the theories is that because the malignant cells are cells of low vitality the rays have a selectively destructive effect upon them. Small doses of the rays are stimulants; if excessive, they are irritant and destructive. The cells in the pathologic processes destroyed by the rays are cells of low vitality. Therefore the rays to have a beneficial effect should be just sufficient to destroy the cells of low vitality and to stimulate the nor-

mal cells. Two or more of the processes mentioned in the theories above may be combined to bring about the favorable results.

Studies of the histological changes taking place in tissues, which have been under treatment by the rays, reported by various observers, agree very closely. First, changes are noted in the cellular elements, most marked in epithelial tissue, and to very much less degree in connective tissue, muscle and cartilage. There is a degeneration of the protoplasm and nuclei of the cells. A large number of mitotic figures may at first be seen; the chromatin fibrils in the nuclei are more marked, and the cells then lose their outlines and finally the nuclei disintegrate. Giant cells have been seen in the neighborhood of the degenerating cells. After the changes in the cells have begun, changes are noticed in the blood vessels. The endothelial cells of the intima proliferate and may even occlude the lumen. The leucocytes infiltrate the surrounding tissue. These changes give evidence that first there is a stimulation of the cells carried on until there is a degeneration; this is accompanied by inflammatory reaction evidenced by the infiltration of leucocytes which complete the destruction and removal of the degenerated tissue replacing it with healthy tissue. It is noted in pathologic tissue that the morbid cells are acted upon before the normal cells.

Technic.—In applying the rays no stereotyped rules can yet be made; no definite dose can be prescribed.

The controlling factors, the combination of which admit of such great variation in the treatment of each case, are the generating machine, the quality of the tube, the length of time and the frequency of exposures, the distance of the tube and lastly the idiosyncrasy of the patient.

Machine.—As to which is best, the static machine or coil, I believe that good therapeutic results can be obtained with both machines.

The chief advantage of the coil is that it can be worked in all kinds of weather, whereas the chief advantage of the static machine is that it can be used for other electro-therapeutic uses than the X-Ray.

The quality or penetrating power of a tube is dependent upon the degree of vacuum in the tube and the resistance in the secondary circuit. The former can be varied at will by means of the chemical regulator attached to

nearly all tubes. A low vacuum or soft tube has low penetrating power. A high vacuum or hard tube has high penetrating power. The resistance in the secondary circuit can be regulated by the spark gap interrupter which can be attached to either a coil or static machine.

By means of it one can instantly obtain rays of all degrees of penetration. Besides the penetrating quality of the rays there must be considered the quantity or intensity of the rays. This is regulated by the amperage of the generator. The more intense the ray the shorter need be the exposure.

In treating cases my object is to use a ray that will penetrate just beyond the diseased condition.

Distance.—The distance of the part from the tube should depend chiefly upon the depth of the diseased process. Since the intensity of the rays varies inversely as the square of the distance, the further the part is from the tube the more uniform will be the effect throughout the tissues, for the further from the tube the less does a certain distance make in the difference in intensity of the rays. If the part be placed close to the tube the effect on the surface may be so intense as to be destructive, whereas deep within the tissue it may be only stimulating.

Length of Time of Exposure.—As to the length of time of exposure, this is dependent upon the quality of the tube, the original intensity of the rays and the distance of the parts from the tube and the effect to be produced.

Since the intensity of the rays varies inversely as the square of the distance, the further the parts are from the tube the longer must be the exposure to produce the same effect. As the distance increases, the length of exposure must increase directly as the square of the distance. For instance, if we wish to produce at 10 inch distance the same effect as at 2 inches, we must have 25 times as long an exposure.

This theoretical rule I have confirmed by practical experience in the production of redness on the skin.

Frequency.—As to frequency, my general rule is to treat almost daily at a distance of 6 to 8 inches for 10 minutes until some effect is observed and then to be guided by the indications. This general rule for what might be called an average dose must be altered to suit individual cases.

In many skin diseases we wish only a stimulating dose; we must then give it less frequently.

Idiosyncrasy.—The idiosyncrasy of the patient has, I believe, been exaggerated. While it should be taken into consideration, it is comparatively of small importance. The susceptibility of different portions of the same body varies more than the idiosyncrasy of different individuals.

Application to Disease.—Now as to the actual application of the rays to the cure of disease, the indications for their use must be based upon the physiological actions suggested by theory, and by the results of actual experience.

These indications are bactericidal, stimulative, destructive and anodyne. One readily sees from these actions what a broad field lies open to experimentations with the rays. Experience has yet to teach us the definite limitations of their use.

The superficial growths are most susceptible to their influence; the deeper the growths, the more difficult it becomes to apply properly the rays and the less favorable is the prognosis.

In many instances more than one of the therapeutic actions mentioned above take place.

To mention the diseases which have been reported as having been successfully treated with the rays, one would have to go through almost the whole list of skin diseases in addition to many pathological conditions elsewhere. Epithelioma, lupus vulgaris and psoriasis head the list of the conditions treated with the greatest and most uniform success.

The bactericidal action is chiefly responsible for the good results in the parasitic diseases as tinea, tonsurans and circinata, and lupus vulgaris, as well as deep seated bacterial diseases.

The stimulating action is effectual in treating psoriasis, chronic eczema, lichen planus, lupus erythematosus, alopecia, acne vulgaris and rosacea. In those pathological growths where the abnormal cells are of much lower vitality than the surrounding cells, they may be destroyed while the normal cells may be stimulated. This selectively destructive effect is indicated in many new growths particularly the malignant ones.

The anodyne effect of the rays is most marked in the relief of pain in malignant growths. It has also proven successful in neuralgia and pruritus.

REPORT OF CASES.

Since a detailed report of the cases treated would be too long and tedious, I will summarize them briefly. A detailed history of each case,

with the treatment, can be found in the records at the Memorial Hospital.

The treatments were given with two machines now at the Memorial Hospital, Richmond, Va. One a Heinze coil, capable of producing a 20 inch spark, with a liquid interrupter. The other a 12-plate Morton-Whimshurst-Holtz static machine built by Van Houten & Tenbroeck and run by a one-half horse-power motor. The tubes all had vacuum regulators. Both machines had spark gap interrupters. The average exposure was ten minutes at eight inches, with a medium tube.

The tube was enclosed in a box arrangement to protect myself. In most cases tin or lead foil was used to shield the parts of patient not to be exposed, a liberal margin around each lesion being left uncovered.

In the diagnosis of the cases I did not feel justified in taking a section because I believed the clinical diagnosis sufficiently definite; and because I believe that taking a section prevents prompt healing and increases the danger of metastases by opening the capillaries and other vessels.

Six cases of *Epithelioma* have healed. The first, eight months ago. None have shown any sign of recurrence. In one case the growth had been curretted before the patient was sent to me for treatment. In one case which I treated, not included above, the growth was excised after six exposures in the course of two weeks. Microscopical examination of the tissue removed showed degenerative changes of cancer cells, atrophy of the cells in the pearls and infiltration of round cell leucocytes and plasma cells. From the above patients several senile keratoses were removed with the rays, which were not considered epitheliomas.

Two cases of *Carcinoma of the Face*, with considerable destruction of the tissue. One healed; in the other the pain was relieved, the discharge ceased, all ulceration healed, and the large cavity embracing the left antrum is filling in with granulation tissue.

One *Carcinoma of Aural Region*: One-half lobe destroyed, large and ulcerated cavity extending deep into head. Considerable discharge, very offensive odor, agonizing pain. Pain relieved, cessation of discharge and fetor. Cavity nearly filled with granulation tissue. Still under treatment.

One case of *Carcinoma of Submaxillary Region*: A growth on the lip had been removed

with a paste; later a metastasis began in the submaxillary gland. The growth now involved the submaxillary glands and the tissues surrounding the whole left side of lower jaw. Constant and excruciating pain. Pain relieved. Freer use of lower jaw. Diminution in size of growth. Still under treatment.

Two cases of recurrent *Carcinoma of Breast*: One died. An autopsy revealed numerous metastatic growths in liver, kidneys and other organs. In the other, after six weeks' treatment, the hard masses in the old scar have softened and nearly disappeared. She is still under treatment.

One case of *Acne Rosacea of Nose*: The redness disappeared, but the dilated capillaries persist.

Psoriasis: Two cases—both healed. The patients had numerous patches. Each patch treated disappeared in from three to five exposures. One patch, which had only three exposures in seven days, returned after two months.

One case of *Lupus Erythematosus on Nose*: Healed.

Besides the above, there are a number of other cases of epithelioma and carcinoma and other diseases, now under treatment, which will be reported later.

One case of locomotor ataxia, treated by Dr. A. L. Gray and myself. The patella reflex has returned. The girdle pains, which were very severe, have almost entirely gone. The patient can now walk normally. She has gained greatly in strength and weight.

DISCUSSION.

Dr. A. L. Gray, Richmond, Va. I listened with a great deal of interest to the paper on this subject. Dr. Williams has so thoroughly covered the ground that very little can be added in the brief time allowed for discussion, but there are one or two points which I think it would be very well to emphasize.

First, I am sure that Dr. Williams will agree with me when I say that in cases of rapidly growing carcinoma, it is best to give in the start frequent and prolonged exposures until we can get a distinct reaction, then suspend treatment until reaction begins to subside. I am certain that I have seen tumors grow more rapidly from insufficient exposure, and I have seen them subside promptly after daily sittings of from ten to fifteen minutes each for a week or ten days.

Another point which he has not laid suffi-

cient stress upon is the anodyne effect. When a patient comes to you suffering excruciating pain, it is perfectly beautiful to have them tell you, after a few minutes exposure, that their pain is practically all gone. In many inoperable cases, therefore, where we cannot expect a cure, it is certainly worth the trial to give them the relief from pain which they experience.

One other point, and one which is not my own. It seems to me well to protect ulcerating and open surfaces from floating particles of dust and other irritating material in the atmosphere. To do this, cover the part with a thin layer of gauze, wet with a boric acid solution. While there may not be many pathogenic germs in the atmosphere, oppositely charged particles, flying from the tubes, being driven into the open wound, will cause irritation; and where we can protect the surface, it certainly seems advisable.

Dr. Williams makes a comparison of the advantages of the two machines—coil and static.

There may be some reasons why the coil is to be preferred. The chief one advanced is that it works independently of atmospheric conditions. I am satisfied that the principal reason why our static machines fail to generate properly is that we pay too little attention to the calcium chloride used for drying the atmosphere. The machine I use in the Virginia Hospital is a 12 plate Ranney-Whimshurst-Holtz, manufactured by Waite & Bartlett, New York, and during the twelve months it has been running, I have only failed to satisfactorily charge it on one occasion, and then the calcium chloride had not been changed for several months, and a window near the machine had been left open during a warm rain throughout the night preceding.

Dr. Wm. L. Robinson, Danville, Va. Mr. President, I wish to add a few words on this subject. I have had beautiful results in epithelioma and in one case of osteo-sarcoma of the orbit, but I arise more especially to direct your attention to the efficacy of the X-Ray in incontinence of urine. I have tried it on two cases. One a boy 15 years old, rosy, muscular, in fact a picture of health, who had exhausted every means at the hands of the best men in Baltimore and elsewhere without any relief. Eight weeks treatment gave such positive relief that he left off treatment. Subsequently he took four weeks treatment as an extra safeguard before going to college. His father reports per-

fect relief. This was a most obstinate and aggravated case. He could not retain his urine in school hours or while at play. His parents tried waking him at different hours at night and making him empty his bladder, but resulted in no good. I had tried all medicines at my command before and after going to Baltimore. This was a most positive test and the result perfect.

Dr. Daniel, of Savannah, suggested the treatment to me. I hope others will give it a fair trial and report results.

Dr. Fennion G. Williams, in closing the discussion, said: I am glad that Dr. Gray has emphasized the anodyne effect of the rays. If this were their only effect, the rays would still be very valuable as a therapeutic agent.

In my paper there were many things that might have been said, but as I was restricted to twenty minutes, I could give only a general review of the subject. I wish that all those experimenting with the rays would give their experience. We might then be able to explain some of their mysterious effects. Among the unexplained effects are the results reported in the treatment of locomotor ataxia and chronic Bright's disease. If the rays really have a selective influence upon fibrous tissue growth, great will be the advance in our fight against disease.

SECONDARY ENLARGEMENT OF THE PROSTATE.*

By WILLIAM LOWNDES PEPLE, M. D., Richmond, Va.,
Professor of Histology, University College of Medicine; Chief Assistant Surgeon St. Luke's Hospital etc.

By the term "secondary enlargement of the prostate" is meant the inflammatory enlargement of the already hypertrophied organ.

In selecting for discussion one of the complications of a disease rather than reviewing the subject in its entirety no apology is offered, for, it is this secondary enlargement, and not the primary hypertrophy, which in a large number of cases precipitates the bladder crisis, demanding immediate mechanical relief.

Intelligent prophylaxis will often prevent this secondary condition, and when it has supervened and actually threatens life careful

* Read at the annual meeting of the Alumni Association of the University College of Medicine, May 14, 1903.

painstaking treatment will frequently relieve it, thus relegating to the surgeon only those cases in which the primary hypertrophy mechanically prevents the constant introduction of the catheter.

The object of this paper is to impress the writer's belief that the catheter life when possible is far preferable either to the annoyance of the supra-pubic fistula or the uncertainty and danger attendant upon the more radical procedures; and further, that if taken early and treated carefully the catheter life is possible in a far greater number of cases than we would commonly suppose.

In order to appreciate the morbid changes designated as secondary enlargement it will be necessary briefly to consider the location and structure of the normal organ and the pathology of the primary hypertrophy.

The prostate is placed in front of the neck of the bladder surrounding the commencement of the urethra. It lies behind and a little below the pubic symphysis, posterior to the deep perineal fascia. Below it rests upon the rectum from which it is separated by loose fibro-elastic tissue, and through which it may be distinctly felt.

In the adult it is one and a half inches wide, one and a quarter inches long, and three quarters of an inch thick. Though subject to many variations in shape it usually presents two lateral lobes connected by an isthmus. The urethra passes through the isthmus nearer to the upper than its lower surface. That part of the isthmus lying under the floor of the urethra extends back upon the neck of the bladder posterior to the beginning of the urethra and is called the thick or middle lobe. The urethra then has a lobe on each side, is roofed over by the thinner portion of the isthmus, while the thicker portion not only lies beneath the floor but also extends back behind its origin, forming there a third lobe.

The prostate is not a gland. It is a musculo-fibrous body, embedded in which are from eighteen to thirty compound tubular glands. Externally a stout capsule of fibro-elastic connective tissue surrounds it. Beneath this is a well defined layer or non-striated muscular tissue. These two tissues constitute the stroma or interglandular frame work of the organ and contribute three-fourths of its bulk.

Of the two the muscular tissue is by far the most abundant, but the connective tissue is very

widely distributed for it furnishes the external capsule, the intra muscular septa and the basement membrane of all the glands.

The terminal division of the glands whose excretory ducts open on the floor of the urethra in prostatic sinus, lie in the musculo-fibrous stroma of the three lobes. Those in the middle lobe are best developed.

To summarize: The prostate is composed of three elementary tissues, the epithelial or glandular, constituting the parenchyma, and the muscular, and connective, together constituting the stroma. The parenchyma contributes but one-fourth to the bulk of the organ. Of the remaining three-fourths, or stroma, muscular tissue furnishes the major portion. The fibro-elastic tissue, while small in amount, permeates every part of the entire organ. In the middle lobe the septa between the gland acini are composed almost entirely of fibro elastic tissue instead of muscle.

The blood supply is of peculiar interest in its bearing upon the pathology of the prostate. Its arteries are derived from the internal pedic, vesical and hemorrhoidal. They penetrate the capsule and pass along the larger trabeculae to the interior of the lobes where they break up into capillary networks which surround the fundi of the glands. The veins from the deeper parts of the lobes follow the trabeculae until they reach the capsule in which they form a rich plexus. They communicate freely with the veins from the sides and base of the bladder, the two together constituting the vesico-prostatic plexus. This plexus receives the dorsal vein of the penis, anastomoses freely with the hemorrhoidal plexus below, and finally pours its blood into the internal iliac vein. Separating the prostate from the rectum is a collection of loose fibro elastic tissue, in which lie many branches of the hemorrhoidal plexus of veins. Above, the fibrous coat or capsule of the prostate blends with fibrous coat of the bladder and here lies the vesico prostatic plexus of veins. The muscular coats of the bladder wall blend with the muscular tissue of the prostate. Next comes the fibro elastic tissue of the mucosa surmounted by the epithelium. The fibro elastic tissue of the mucosa is richly supplied with blood vessels.

Hypertrophy of the prostate occurs as a rule in men over fifty years of age. Of its cause little is known. It consists of a vast increase of the stroma of the organ and especially of its

connective tissue. Microscopic examination shows it to be a true hyperplasia analogous to the uterine fibro myoma. The overgrown tissue shows no tendency to contraction as does the interstitial increase in the cirrhotic liver and kidney, so we can look forward to no time when nature will shrink the organ.

Although we would naturally expect to find the seat of hypertrophy oftener in the third lobe, in which the proportion of connective tissue is greatest normally, it probably involves one or both lateral lobes with equal frequency. The enlargement may involve one, two or all three lobes equally or in varying degrees.

The condition oftenest met with is that of small nodular fibroids embedded in the enlarged lobes, just as are seen in the uterine fibro myoma. These may protrude into the urethra or bladder and become sessile or pedunculated. The location of the hypertrophy is of far greater importance than its size, for the symptoms of hypertrophy are the symptoms of obstruction to urination. If the hypertrophy does not interfere with urination it seldom presents serious symptoms.

According to White and Martin, 80 per cent. of the old men who have enlarged prostates present no serious urinary symptoms. The effect of hypertrophy of the prostate upon the urethra, no matter which lobe or lobes are involved, is to cause a lengthening and a deviation from its normal course. If a lateral lobe be involved the urethra will be deflected to the opposite side. If both lateral lobes be involved it will be compressed laterally. If the median lobe be involved the urethral floor will be lifted bodily up, leaving a cul-de-sac in the bladder behind it which cannot be emptied. Therefore it can readily be seen that any material enlargement of this lobe will always give rise to symptoms of urinary obstruction.

The presence of residual urine, however, does not necessarily mean mid-lobe enlargement, for it may be an accompaniment of enlargement of the lateral lobes when they project backwards and form a dam or bar, or by their bulk cause atrophy and sacculation of the bladder floor.

We have now considered the normal structure of the prostate, which enables us to appreciate the nature and location of the stromal increase. We have considered its location between two venous plexuses, one of which is prone to congestion and extensive dilatation.

Covering it and passing through its isthmus we have found a mucous membrane, at times peculiarly susceptible to infection and having beneath it a highly vascular connective tissue. Finally we have seen that certain parts of it when hypertrophied result in a pouching of the floor of the bladder from which urine can never be expelled and in which it must remain as a stagnant irritant.

Thus we have supplied all the conditions necessary to intense congestion of the vesico prostatic plexus and vesical and deep urethral mucosa, which constitutes secondary enlargement of the prostate.

Secondary enlargement of the prostate may consist merely of an enlargement of the vesico prostatic plexus and of the mucosa of the bladder and deep urethra, or what is more common, this condition may have the additional element of infection, giving rise to cystitis and deep urethritis. In either event there is a marked rapid increase in size of the already overgrown organ which often results most disastrously.

Clinically there are two divisions of secondary enlargement.

1. That in which the primary hypertrophy offers little or no obstruction to urination, as evidenced by there being practically no residual urine. These are the cases that are peculiarly amenable to treatment for in them we may look for permanent relief.

2. That in which the primary hypertrophy offers more or less obstruction to urination, as evidenced by the constant presence in the bladder of residual urine.

The large majority of these cases are of primary mid-lobe hypertrophy and a partial or complete catheter life is all that palliative treatment can offer.

Causes.—The causes of secondary enlargement of the prostate are those conditions which tend to produce congestion in the vesico-prostatic plexus, or congestion, irritation or infection of the mucosa of the bladder and deep urethra.

Among them should be mentioned surface chilling by exposure to cold or dampness, hemorrhoids, habitual constipation, excessive venery, excessive acidity—as in gout—the presence of a stone, and lastly but most important of all, the presence of residual urine which undergoes ammoniacal decomposition and renders the entire bladder contents alkaline.

Infection may take place by a backward ex-

tension of a urethritis; at times we are entirely unable to account for its entrance, but by far a too frequent cause is unclean instrumentation.

Symptoms.—In a case of the first class, that is one of lateral hypertrophy with little or no residua urine, we see the symptoms most clearly defined, for there are few if any symptoms presented by the primary enlargement with which they may be confused. The patient is gouty and his urine has become excessively acid; he has indulged too freely in excesses; he has become constipated or has been unduly exposed to cold, or from some other cause his pelvic vessels have become congested. He experiences hasty, frequent and painful urination, with a feeling as if the bladder had not been entirely emptied. There is a sensation of weight and pain in the perineum, the pain frequently extending to the testicles. It is exceptional for this condition to end in retention unless there is infection of the congested mucous membrane. This, however, is a most frequent sequel and then are added to the symptoms of congestion those of true cystitis and urethritis. The pain in the rectum and perineum become more intense and radiate to the back and groins. It is now especially severe over the pubis, and there is a sharp burning pain in the urethra just back of the glans. Urination becomes more and more frequent and painful, the straining is violent and the stream is small and interrupted. The urine is thick and turbid with pus and mucous, and at times bloody. The temperature may be considerably elevated, but often is normal. The condition goes on from bad to worse until finally there is complete blocking of the urethral orifice, complete retention of urine and all the attendant horrors of the bladder crisis.

In a case of the second class, with mid-lobe hypertrophy or lateral hypertrophy which has formed a bar before the urethral orifice and in which there is always residual urine, it may at times prove difficult to tell whether the obstructive symptoms are due to the primary or the secondary enlargement.

The patient has for some time presented the usual symptoms of prostatic obstruction. His stream is tardy in starting, is feeble, and urination is frequent and unsatisfying. The frequency has been especially annoying at night. Often it is a case where urination has long since ceased and his water has been drawn at regular intervals with the catheter. If he has had residual urine for any length of time there is

almost sure to be a chronic cystitis, as evidenced by the pus and mucous in his urine. He has been subjected to exposure or some of the conditions essential to congestion of the pelvic vessels; infection has been introduced into a congested mucous membrane or, what is very frequently the case, there is an acute exacerbation of the chronic inflammation with all the intensity of an acute infection.

At any rate the primary enlargement has been rapidly augmented by the congestive increase and the bladder is blocked, not only from within, for the old man finds that his catheter will not pass. It is blocked also from without. This is the bladder crisis.

So similar are these cases to one another that it will not be out of place to pause and draw a clinical picture as seen by the surgeon or consultant.

He is ushered into a room redolent with the ammoniacal fumes of decomposing urine. Upon the bureau or table are a half dozen or more catheters of different sizes, one a varnished silk affair with tilted nose and broken at its middle. The old man is lying upon his back. His bladder bulges in a mound above his pubis. There is a large bloody spot upon his shirt, and dried blood stains the inner side of his thighs and sears the lips of his meatus. The introduction of a soft rubber catheter discloses a boggy mass which bleeds readily and by which the catheter will not go. Often there are side tracks and tunnels innumerable, but none of them lead to water. His pain has been intense; the last two or three successful introductions of the catheter were followed by frightful chills and burning fever and then an utter prostration. His pain has ceased and a delirium, fitful and transient at first, has deepened into coma. His skin is now cold and clammy; the respiration is deep and labored. The bladder has reached the utmost limit of its distension; the urine has backed up into the kidneys. These organs, so to speak, are running under water. When the pressure of the water equals the pressure of the blood in the renal artery they will stop. A death from uremia is not good to look upon.

Diagnosis.—In the first class of cases this is not difficult for neither stricture nor primary prostatic enlargement present sudden obstruction as an early symptom, and in the absence of any progressive obstructive symptoms these two causes can be eliminated.

From abscess of the normal prostate, or acute

suppurative prostatitis, as it is called, there is little need of a diagnosis for the treatment of the two conditions is identical until fluctuation is felt in the latter, when it should be opened through the perineum.

The simple congestive type can readily be differentiated from the true inflammatory type by the absence of pus in the urine.

In the second class of cases secondary enlargement to a greater or less extent will invariably be found, and when blocking of the bladder exists or is threatened it is of the greatest importance to determine just what part the secondary factor plays in its production and whether removal of this factor will bring relief either complete or partial. Without a knowledge of the nature of the primary enlargement or the amount of residual urine prior to the acute stoppage it will be difficult and often impossible to determine.

Rectal examination will show which lobe or lobes are involved, and should always be carefully made. If the case is seen before the bladder is blocked, introduction of the catheter will, of course, give us a fairly accurate idea of the primary condition. In sudden blocking of the bladder in an old man, whether we know the character of his primary enlargement or not, secondary enlargement should always be suspected as a cause, and unless the symptoms be extremely urgent, he should be treated with a view to its reduction.

Treatment.—This is constitutional and local. All cases of prostatic hypertrophy should receive careful constitutional treatment as a preventive against secondary enlargement. The patient should be warmly clad; he should avoid exposure and dampness. His bowels should be kept well open. Excesses of all kinds should be cautioned against; with fresh air, moderate exercise, wholesome food and tonics his health should be kept to as high a standard as possible. His urine should be examined at least twice a month and kept at a normal degree of acidity. Where there is residual urine this should be done still oftener. Here the urine should also be made antiseptic, if possible, and this is best accomplished by the administration of five grains of urotropin or cystogen three or four times daily. They have no deleterious action either on the stomach or kidneys, and can be kept up indefinitely. Of the mineral acids, phosphoric is generally found to be the most palatable and efficient. It is given in from five

to twenty drop doses three or four times daily until the urine is acid, when the dose sufficient to maintain it is readily found. If the residual urine amounts to as much as three ounces it should be withdrawn morning and evening, and the bladder flushed with a 5-10 per cent. boric acid solution, or a full or half strength Thiersch's solution. When urination is impossible the bladder should never be allowed to become painfully distended. Catheterization should be done at regular intervals, and the bladder should receive an antiseptic flushing at least twice a day. An instrument or catheter should never under any circumstances be introduced into the bladder save under the strictest antiseptic precautions. The bladder seems at times so resistant to maltreatment in this respect that we are inclined to be skeptical until sooner or later, at another's expense, we learn the lesson which is not soon forgotten.

The treatment of cases of complete retention, where blocking of the bladder exists or is imminent, is both constitutional and local. The constitutional treatment is directed toward nourishing and sustaining the patient and rendering his urine acid and antiseptic. He should be well purged and kept in bed in the recumbent position. His food should be concentrated and readily assimilable. He should be given water freely and stimulants as indicated. Urotropin or cystogen and phosphoric acid should be administered as previously suggested.

The local treatment, directed toward the reduction of the secondary enlargement, consists of hot sitz baths and rectal irrigation to relieve pelvic congestion, and evacuation and antiseptic flushing of the bladder.

While the constitutional and local measures mentioned above should never be neglected the most important question will be, how to evacuate the bladder. It is accomplished by catheterization or by supra-pubic cystotomy.

The choice of a catheter is a question of great importance. In cases of the first class, when no false passages exist, even though there be marked lateral deviation of the urethra, the soft rubber catheter can usually be introduced if care and patience are exercised. In cases of mid-lobe involvement it is often useless, for it will not rise up over the boggy mass, but burrow into it or double back upon itself. The use of the varnished silk woven catheter is an unsurgical procedure, for it cannot be sterilized. The silver catheter, with a prostatic curve, will often

prove most useful. The objections to it are that we are tempted to use too much force in introducing it, and when into the bladder its tip cannot be turned down into the cul-de-sac without causing great pain or injury to the prostate. So even at best we can never completely empty the bladder with it, and it is only by repeated flushings that all of the residual urine is removed.

The same objections may be urged against the old style catheter, for its curve is also fixed and it is capable of doing considerable damage when force is used. The instrument which probably presents the fewest objections was devised by Dr. E. G. Hopkins. It is a modified stylet, and consists of a soft rubber catheter and a very small, highly flexible and springy brass wire, whose tip is guarded by a small shot. The wire has a handle of metal like an ordinary sound, only it tapers to a point where the wire sinks into it, so that when the shotted end is in the tip of the catheter this will fit tightly into the lumen of the outlet, thus firmly fixing it. Though it can be bent to any curve this will not remain fixed, for it readily moulds itself to the urethra. Its springiness greatly lessens the possibility of injuring the urethra. It combines the advantages of the soft rubber and the silver catheter, with none of the disadvantages of the latter, for after it is introduced and the wire withdrawn, its tip drops down into the cul-de-sac and completely empties it. From the readiness with which it insinuates itself into the devious windings of the distorted urethra, it has been called the ferret catheter.

The same rules hold good for the introduction of all catheters. Be clean, be gentle, be patient.

With a moderately sharp knife or even a blunt trochar, a forcible entry may be effected above the pubis, but you cannot bully the bladder from below. Continuous catheterization has been employed in these cases, and is effected by fastening the catheter to the penis, usually with adhesive plaster, so that the bladder is kept empty. When the vesical sphincter is not paralyzed or distended by the overgrowth the presence of the catheter will give rise to intolerable pain and tenesmus, and will have to be removed. The urine should be drawn at regular intervals of from four to six hours. Painful distention should never be permitted to occur. Twice a day the bladder should be irrigated with an antiseptic solution, which should be as warm as can comfortably be borne. An ordinary bulb

syringe with a glass tip is the best instrument for irrigation, for the exact quantity that enters the bladder is known, and any resistance is readily detected by the fingers that compress the bulb. The amount of fluid injected is about six ounces, and this can be repeated from one to four times, according to the transparency of the returning fluid. The fountain syringe is dangerous when employed for this purpose. Thiersch's solution, which consists of salicylic acid 2 parts, boracic acid 12 parts, and water 1000 parts, either in full strength or diluted, is one of the best for this purpose. It is not only a reliable antiseptic, but it acidulates the bladder locally and helps to keep the phosphates in solution. When there is great tenderness or where there is a tendency to hemorrhage the acid solutions, even though quite dilute, give rise to severe pain, and seem to aggravate the tendency to bleed, and some less irritating solution must be used. Chloral hydrate, whose antiseptic properties and local anodyne effect have never been generally appreciated, gives results here which are most gratifying. In a solution, one part of chloral to 500 of water, the pain is lessened or relieved and the hemorrhage is quickly checked. Under the general and local treatment outlined the painful symptoms subside, the urine clears up, the enlargement gradually disappears, and in a week or more the patient is restored to the condition he was in prior to the acute attack.

Supra-public cystotomy for the establishment of an artificial urethra.—This gives the same results as the palliative treatment, and does so quickly and completely. Dr. Hunter McGuire said that many patients upon whom his operation had been performed were subsequently enabled to void much of their urine by the natural channel. In other words, complete physiological rest enabled the organ to return to the size it had attained by the primary interstitial overgrowth.

Cases of the first class should never be subjected to this operation unless uremic symptoms are present from long distention, or the catheter cannot be introduced owing to false passages or associated stricture. Cases of the second class should be operated on when their surroundings are such that they cannot receive intelligent attention, for repeated over distention will lead to dilatation of the ureters, pyelitis and surgical kidney. Where uremia is present it should be done without delay. When the urine shows evi-

dence of marked nephritis it is advisable, for the possibility of prolonged retention is a standing menace to the already diseased kidneys. The operation requires but a simple preparation, can be done readily under local anesthesia, and should be completed in from three to ten minutes. A finger thrust through the supra-pubic gash sinks into a boggy mass, which bleeds readily and freely and feels far more like the placenta to the touch than the fibroid uterus, its analogue. Could the same examination be made two weeks later the amount of congestive swelling could be readily and fully appreciated. Local anesthesia should always be employed when the kidneys are involved. If properly done the operation should have no mortality, though death from uremia after general anesthesia in old men with advanced nephritis, is not uncommon. No radical operation should be attempted upon the prostate when it is swollen and inflamed. With a more careful selection of cases and a more thorough preparatory treatment the mortality of prostatectomy will doubtless be reduced, and it is to be hoped that the results of the other radical procedures will be greatly improved both as to permanency and completeness.

THE ACCURATE ESTIMATION OF PULSE TENSION.*

By HENRY WIREMAN COOK, M. D., Richmond, Va.,

Resident Physician Memorial Hospital; Late Resident Medical Officer Johns Hopkins University, and Assistant Resident Physician Thomas Wilson Sanitarium.

The successive developments during the past half century in the line of accuracy in estimating physical signs and symptoms have each marked definite advances towards placing medicine upon the footing of a more exact science. The trained clinician is no longer satisfied with the vague information to be derived from unaided sense perception, but calls to his assistance the various mechanical devices which can gauge and standardize such symptoms as are possible by these methods.

The fallability of the senses is too commonplace and obvious a source of error to need emphasizing; and wherever the senses can be sup-

plemented by some mechanical means of estimation, we are able to substitute precision for vagueness.

I may mention a few of these methods which have come into more or less general usage before detailing the one to which I beg especially to call your attention.

The measurement of pulse rate was the earliest effort towards accuracy in the determination of clinical symptoms, and later the gauging of fever after bitter opposition came into general use, so that at the present time a watch and a thermometer are considered essential to every physician; though it was but thirty-five years ago that Wunderlich made the first acceptable exposition of the clinical value of accurate temperature estimation in disease. Gradually other instruments of precision came into practical application, thus, the hæmaglobinometer aided color perceptions, as the thermometer aided heat perception, and the watch time perception; the blood counter gave the degree of leucytosis; the albuminometer the quantity of albumin in the urine, titration of stomach contents gave the degree of acidity, etc.

All the while and until within the past decade there remained one symptom which is of paramount importance in the diagnosis and treatment of many conditions, which is more or less important in nearly all, and which continued inaccessible to accurate measurement, and was necessarily gauged most indefinitely and in the vaguest phraseology. This symptom was that quality of the pulse which gives the best index of the strength of the cardio-vascular system—namely, pulse tension or blood pressure.

The first impulse on seeing any case is to feel the pulse, and instinctively and almost simultaneously are noted the rate, rhythm, force and quality. Of these four components of the pulse, its force is by far the most important and the one which we attempt to gauge most carefully. It is the force or strength of the pulse which gives the true indication of the vigor of the cardio-vascular mechanism, the vital system upon which life immediately depends. When the respiratory system fails we continue it artificially; when the urinary system ceases to functionate we infuse and administer diuretics; when the digestive system becomes blocked we operate; consciousness may be suspended and nervous paralysis be complete and still we hope, but if the cardio-vascular system fails there is an end to everything. Pulse strength is at once

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the manifestation and the essential element in the normal composite functioning of the cardiovascular system.

Pulse rate and rhythm are often excellent indications of pulse strength, but a blood pressure reading is the pulse strength; and although we may often conclude that if the pulse rate is rapidly rising the pulse is weakening, yet this is by no means always true. Instances are numerous of a rapid rate with a strong pulse and a slow rate with weak pulse.

In watching a desperate case for some indication of a change it is the strength of the pulse which we follow most anxiously. It is of small advantage for the pulse rate to slow if at the same time the strength fails, and a rise in rate causes little anxiety if the strength continues good. It may be suitable to state here briefly the factors involved in the production of the arterial tension which is essential to the nutrition and life of the organism. Under constant conditions wide variations from an average normal blood pressure are permissible with life and activity, but they are always associated with more or less grave diseased states, and beyond certain limits are incompatible with continued life.

The heart is, of course, the source of the circulatory energy, the *vis a tergo*, without which there is no pulse, and which, as long as it beats, continues some impulse through the circulatory system. Although it is the essential feature in the production of any pulse, two other factors are necessary in maintaining the pulse tension in the constant condition which is necessary to normal function. These factors are—first, the peripheral resistance exerted by capillaries and small arteries; and second, the energy which is stored in the elastic walls of the larger arteries during systole, and which is given out and continues the pulse force while the heart is resting, during diastole.

It is during systole that we have the total action of all the circulatory factors—the heart beat, the elastic force of the artery wall, and the peripheral resistance of the smaller vessels. During diastole we merely have the residual effect of the artery wall resistance.

A fourth factor in this action is the volume of blood, which, however, only plays a part after considerable hemorrhage so large that the compensatory action of the vasomotor system cannot overcome its effect by constricting the size of the peripheral vessel. This compensatory action, if

normal, has beautiful adaptive powers, especially well shown after severe hemorrhage. Thus, in following the blood pressure, the vasomotor system in less than half an hour had counteracted this by peripheral constriction and brought the blood pressure back to normal.

It is readily seen that it is the systolic pressure, the sum of all the forces of the circulatory mechanism, which is of the most clinical interest, and that the other phases of the pulse wave, of however great interest to the physiologist, being only residual effects, are of minor importance to the practitioner.

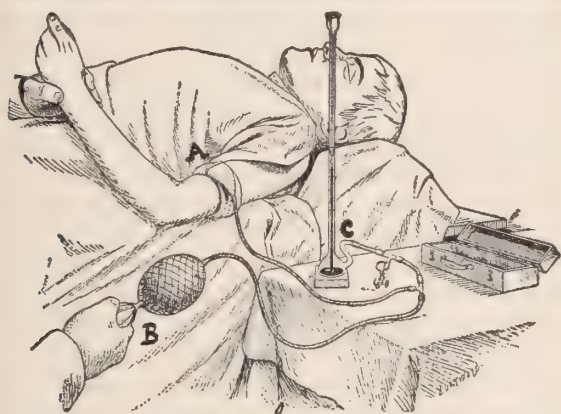
The importance of accurately gauging this element of the pulse has been recognized for centuries, and all masters of the science since Galen have laid much stress upon the value of training the sense perception to variations in pulse force. Considering the difficulties surrounding the estimation of pulse force by finger palpation the skill of the trained clinician is often remarkable, but of necessity is lacking completely in detecting smaller degrees of difference, and, what is more important, such an estimation cannot be expressed or recorded in language that is definite to any but the observer.

Recently in New York a test was made of what may be taken as above the average accuracy in palpitating pulse force. Five well trained clinicians examined the pulse in a series of cases and wrote down their opinion. It was then found that no two agreed as to the order according to strength nor as to the phraseology with which they attempted to express what they felt. Similar confusion would probably result if five such men had made a similar test of the accuracy of heat perception in a number of fever cases before the thermometer gave to all an equal and precise standard.

Physiologists as well as clinicians have long recognized the value of accurately gauging pulse force or blood pressure, and for them the problem has been a comparatively easy one for methods are applicable in the laboratory, which could not be used clinically. Ludwig, in 1847, in devising the kymograph made the accurate study of the pulse possible to the physiologist. An artery of a dog is opened and directly connected with this instrument which accurately records all changes in the pulse. This, of course, made many facts concerning the pulse clear and gave the opportunity of accurately studying the effect of drugs upon the circulation. In such manner nearly all the conclusions concerning our

therapy of the vascular system was deduced. These methods were, of course, confined to the laboratory, and while many valuable clinical conclusions could be drawn from the action of drugs on dogs, still the necessity of some means of measuring pulse tension at the bedside was sorely needed.

Vierorat in 1855 made the first attempt to measure blood pressure clinically but his methods were so crude as to preclude any practical value. I shall not detail the successive attempts to perfect a practical instrument for measuring pulse tension but merely mention the three instruments which have lately obtained more or less extended clinical usage. First, the Riva Rocci devised in 1896; the Hill-Barnard devised in 1898; and the Gartner in 1899. The instrument which I show you is modified from



the principles of the Riva Rocci and is intended to give the simplest possible apparatus practical for clinical use.

In measuring the pulse by finger palpitation we attempt to estimate the pressure necessary to occlude the artery and so obliterate the pulse. In this instrument the same principle is made use of and the actual pressure is indicated by a mercury manometer thus giving the equivalent of the pulse tension in m. m. of mercury. The apparatus is simple, consisting essentially of an enclosed system of rubber tubing, at one end a flat cloth covered bag (A) the arm piece, which can be so adjusted as to fit the patient's arm, and at the other end a rubber bulb (B) for increasing the pressure within the system; connected by a side tube is a simple mercury manometer (C) for measuring the pressure. The practical use of the instrument is extremely simple and a determination requires less time than a thermometer requires to register. The arm piece is best placed about the patient's upper arm and

the observer then gradually raises the pressure in the system while keeping a finger on the radial pulse of the patient distal to the band. When the pulse disappears the height of the mercury column is noted and the pressure allowed to fall until the pulse returns. The points of disappearance and return of the pulse will usually be about 3 m. m. apart and their mean is taken as the systolic blood pressure reading or the measure of pulse tension. The instrument has been made for me in two very satisfactory forms by Messrs. Eimer and Amend of New York: One form with a solid glass manometer and large firm base for hospital and experimental use, and the other with a jointed manometer to be packed in a small portable case for more general use in practice.

As the accurate estimation of pulse tension finds extensive application in so many phases of clinical medicine any exhaustive study of the subject would be impossible here. Any one interested is referred to the last volume of Johns Hopkins Hospital Reports for a more complete exposition by Dr. Briggs and the author, from which study much of the following is drawn.

I shall here merely give some of the conditions in which accurate determinations of the pulse tension are of especial value, calling attention to the fact meanwhile that these methods are not merely of scientific value but are simple and practical for daily routine use in hospital and general practice.

The records are best kept on simple ruled charts similar to those for temperature, and with each measurement of pulse tension it is well also to note the pulse rate. The normal blood pressure though varying to a certain extent in different individuals and in the same individual under various conditions is however a fairly constant quality under similar conditions and any marked variation may be taken as an indication of some morbid state of the circulatory system. The normal average blood pressure for an adult man is 130 to 140 m. m. Hg., for woman 120-130, infants 85 to 90, children 95 to 110.

I shall first take up a few illustrative conditions associated with abnormally raised tension. The best known of these is nephritis so proverbially accompanied by the hard high tension pulse that such a pulse is often spoken of as the "nephritic" or "renal" pulse. In this disease by regulating the degree of pulse tension by the

nitrites and other vasomotor depressants, purges, etc., and controlling their administration by occasional accurate determination of blood pressure we can keep the pulse tension constant at the most favorable level and almost obviate the symptoms directly dependent on the high tension such as the distressing headache. I illustrate with a case now in the Memorial Hospital.

We have found nearly every case of nephritis to experience great relief under this method of regulating the depressant treatment, and we are able to push the drugs far enough for effectiveness without fear of excess since we can keep before us an accurate measure of their effect. Two or three grains of sod. nitrite every four hours or alternating every eight hours with 1-100 to 1-50 of nitroglycerine will often afford marked and immediate relief.

An estimation of pulse tension will often point to a method of relief in many obscure cases of headache by demonstrating the presence of an abnormally raised blood pressure.

Menstruation for example is normally accompanied by a rise in blood pressure and we frequently find that a woman who suffers violently from headache during her period has an abnormally high pressure during the interval, and that the further menstrual rise is the cause of the headache and can be relieved by the administration of nitrites.

Again when for any reason bleeding is undertaken the effect on the pulse tension if accurately measured is the best guide to the amount of depletion desirable.

A blood pressure observation will establish a diagnosis in many obscure brain lesions and comatose conditions. A high and increasing blood pressure here gives almost certain indication of haemorrhage into the skull. Cushing has shown that this rise in systemic blood pressure is a constant accompaniment of cerebral compression and is nature's device for overcoming the threatened anemization of the vasomotor centers in the medulla.

In the treatment of broken compensation in heart disease a correct estimation of the pulse tension will frequently be the only guide as to the choice between a stimulant or a depleting course of treatment. For example, with a very rapid irregular pulse if we were sure of a high tension bleeding might be indicated whereas a low tension might contra-indicate such a course. A decision on this point under these difficult

conditions is often impossible by finger palpitation.

On turning to the low pressure conditions we come to the large class of cases where the question of stimulation is paramount. Stimulation of the cardio-vascular system is of such pre-eminent importance that when we use the term "stimulant" without specifying further, it is always meant to indicate a cardio-vascular stimulant. Thus, when we say a patient needs a stimulant we do not mean unless we especially signify, that we wish his sweat glands to increase their functions, or the intestines to hasten peristalsis, or the mental activity to be heightened, but we intend that the pulse should become stronger. Hence it is readily seen how important an accurate knowledge of changes in pulse tension becomes in the administration of a class of drugs the most important function of which is to increase the pulse strength. And as a matter of fact we have found that stimulant drugs can be most intelligently given by watching their effect on the pulse tension by means of an instrument which gives definite numerical determinations. For example, take a case of traumatic shock where we have determined that the blood pressure is—say 65 m. m. Hg. We give to that case 1-20 gr. strychnia in hope of raising the blood pressure. Now, if we follow the blood pressure carefully and at the end of 15 or 20 minutes find it the same, we increase our dose until some effect is noted. If we find the pressure gradually rising we can be content that our dose is sufficient for effect. Without such a guide we should be stimulating almost in the dark, for minor degrees of variations in pulse tension are not intelligible to the palpitating finger for any consecutive number of observations.

Similarly in typhoid, pneumonia, hemorrhage and other conditions where a depressed pulse tension may call for stimulation, we have found that a chart of occasional estimations of pulse tension affords the best guide to the amount and period of drug stimulation. In a large variety of cases these observations taken at short intervals, such as three to five minutes for some time before administration of a drug and as long as its effect lasted, have brought out interesting facts as to the exact effect of so-called stimulant and depressant drugs on the pulse rate and tension, I shall merely give here some of the results of this work without going into detail.

Strychnine is without question the most generally reliable and valuable of the cardio-vascular stimulants and is indicated in all conditions where a correction of abnormally low pulse tension is aimed at, with the possible exception of the final collapse following some convulsive states. Hypodermically its action is most prompt and effective. Doses of 1-40 to 1-20 gr. to an adult strengthens the pulse to an amount equal to 20 to 30 m. m. Hg. and maintains the bettered condition 2 to 5 hours according to the condition of the patient. The action of all these drugs varies inversely with the condition of the patient; that is if the patient is very ill the effect is less marked and more transitory than with a patient with stronger reactive powers. Strychnine is especially effective in hemorrhage and shock where rises of 40 to 60 m. m. are not uncommon. This should make one cautious in administering large doses until the bleeding point has been secured. This caution likewise holds good regarding the treatment of hemorrhage with other drugs that tend to raise the arterial tension, such as adrenalin, ergot, etc., and it may be stated positively that all such are contraindicated until the hemorrhage is controlled. The single exception to this is uterine hemorrhage where ergot is doubly beneficial in controlling the local hemorrhage and raising the systemic pressure.

Digitalis in equal doses acts for a shorter length of time than strychnine, 1 to 3 hours, but in conditions when the heart is chiefly at fault often causes a higher rise. It should be used with caution but is very valuable in many toxic conditions especially as an adjunct to strychnine and alternating with it.

Cocaine is a true stimulant of rather transitory effect but has its place in stimulant therapy. I have been especially interested in watching its effects when given in saline infusion. Owing to the painful and irritating local effects of subcutaneous infusion I have found it very helpful to add 30 to 40 drops of 1 per cent. sol. of cocaine to the first few hundred c. c. of infusion. This obviates all pain and irritation which is of especial importance in any case where shock may be present. It acts as a true cardio-vascular stimulant and gives besides a feeling of betterment and well being to the patient.

Adrenalin if introduced directly into the vein will raise the pulse tension instantly and to almost any extent proportionate to the amount of

the drug administered. Its action is specific upon the smooth muscle fibres of the arteries, but it cannot be regarded as either a cardiac or a vasomotor stimulant. In fact on the other hand it seems to be distinctly injurious to the muscle fibres of the heart. The three cases which I have seen die under its continued administration all closed with symptoms of cardiac poisoning. They were cases of profound shock which adrenalin undoubtedly kept alive for hours by maintaining the pulse tension at a level at which life is possible; but in the end I believe the drug itself was responsible for the cardiac failure. Aside from its local application to stop hemorrhage, the uses of adrenalin are very limited and its internal administration with a view of increasing the strength of the pulses should be confined to the desperate cases of profound shock in which the low tension pulse threatens immediate dissolution. It should be given directly into the vein, dilution of 1-50,000 very slowly but continuously as the pressor action passes off in about three minutes, and its effect should be controlled by frequent estimation of pulse tension.

Alcohol was never found to have any true stimulant action on the pulse tension, and indeed in many cases there would be a fall after its administration. Usually after an ounce or half an ounce of whiskey by mouth there would be a brief rise in tension, but this similarly follows the injection of tr. capsicum or any other irritant to the gastric mucous membrane. When given so as to avoid the irritant effects, as when well diluted, or subcutaneously there is never any rise in pulse tension.

There is no question as to the value of alcohol in disease but it acts either as a food or in some yet undeterminate manner as Gutnikow suggests. It is certainly not a cardio-vascular stimulant.

Saline infusions which have long been regarded generally as a more or less powerful stimulant are likewise entirely wanting in any true stimulant effect on pulse tension. They, like alcohol, cause a primary rise in tension entirely due to the local irritation at site of tissue distension, the afferent pain impulses from which are reflexly indicated by a rise in the blood pressure although the patient may be unconscious. An increase of tension from this cause is not desirable. Infusions are invaluable in toxæmia and nephritis in aiding elimination and in severe hemorrhage to help refill the depleted

vessels, but they are without true stimulant effect.

Of the different drugs amyl nitrite acts the most promptly; one bead will often bring down the blood pressure 40 or 50 m. m. in one or two minutes, but the effect is very transient, the rise being almost as rapid as the fall. Nitroglycerin hypodermically acts in about 5 minutes and may cause a fall of one-third total blood pressure which will not be regained in less than an hour. Sodium nitrite acts more slowly and hence is better for continued administration. Its effect lasts for several hours.

I wish merely to state two other conditions in which the use of accurate estimation of pulse tension has been found valuable.

1st. In the following changes in the patient's condition during anesthesia and operative manipulations. This is especially the case where the condition is weak or dangerous, and during chloroform anaesthesia as this drug has a marked depressant effect on pulse tension.

2d. In detecting perforation in typhoid, daily routine estimations of blood pressure afford a new basis of decision on this important question. A sudden rise in blood pressure in connection with other suspicious symptoms is strong confirmatory evidence. An unchanged blood pressure in spite of very suspicious symptoms almost excludes the possibility of perforation, as the vaso-motor center always reacts by a rise in systemic blood pressure to the peritoneal irritation consequent on perforation.

This has not been intended to cover the field of blood pressure, but merely to call more general attention to the fact that pulse tension now admits of accurate determination and that the accurate determination of so important a symptom gives the clinician in many cases a valuable aid in diagnosis and treatment.

DISCUSSION.

Dr. Herbert Old, Norfolk, Va. I consider this paper a most valuable one, and he describes the use of an instrument which gives us as accurate a method of determination of the blood pressure as the thermometer does the temperature of fever. I wish to say a few words concerning the use of this instrument while administering an anesthetic. How often one hears the operator, although he cannot possibly know whether the patient requires it or not, tell the anesthetizer—especially if the latter is an *intern*—to stimulate the patient again and again, thereby showing a lack of confidence in

his assistant, which is apt to confuse him, and frequently causes over-stimulation of the patient! But with the instrument described by *Dr. Cook*, on the patient's arm, the anesthetizer can take accurate observations of the blood pressure every two to five minutes in bad cases or in prolonged operations, and thus know when to stimulate the patient, and when to warn the operator that he must hasten the operation, or even that he must abandon the operation. Another valuable use of this instrument is in comatose conditions—especially in diagnosing between uremia and cerebral hemorrhage, as it has been determined by observations on a large number of cases that the latter condition is associated with the very highest rise in blood pressure—often from 300 to 350 m. m.

Dr. George W. Drake, Hollins, Va., said: I believe in exercising the sense of touch until we can judge accurately of these things. There is a tendency nowadays to place too much dependence in mechanics, and while I think this is a most valuable instrument, I do not think the instrument should be relied upon altogether.

RHEUMATISM IN CHILDREN.*

By J. P. WILLIAMS, M. D., Richmond, Va.

The rheumatic diathesis manifests itself in children in quite a different group of symptoms from those seen in adults; for this reason the disease was formerly supposed to be rare in early life. It is only within recent years that its frequency and its peculiarities have come to be appreciated.

For our present understanding of the subject we are indebted largely to the work of English physicians who have brought out very fully the close connection existing between many conditions formerly not regarded as rheumatic.

One who has in mind only the adult types of articular rheumatism and regards arthritis as a necessary symptom for a diagnosis will overlook in early life many manifestations which are clearly the result of rheumatic poison.

There is seen at this period a group of clinical phenomena which often occur in combination or in succession whose association was not

* Read before the Church Hill Medical Society, October 22, 1903.

understood until they were all discovered to be related to rheumatism.

Sometimes one member of the group and sometimes another is first seen, but when one has appeared others are likely to soon follow.

Rheumatism in childhood, then, is manifested not alone by arthritis with acute or sub-acute symptoms, but by a large number of other conditions which are not to be regarded in the light of complications but rather as forms of the disease.

It is not in the province of this paper to discuss the various theories regarding the nature of rheumatism and its exciting causes. The drift of medical opinion to-day is strongly toward the view that it is an infectious disease probably of microbic origin.

The excessive formation of acids in the system may be regarded as a result of the infection or a condition necessary for the activity of the specific poison.

An inherited rheumatic diathesis is universally recognized as an important predisposing cause of this disease so that it frequently occurs in different members of the same family. When the family history shows a predisposition to rheumatism it occurs in the child from a slight exciting cause; if no such predisposition exists it only occurs through unusual circumstances of exposure.

The lactic acid which is always found in the blood of rheumatic subjects is said to be the ptomainic product of the microbe and this ptomaine gives rise to the active symptoms, and not the microbe.

Of the other causes the most frequent are, living in damp houses, direct exposure to cold, poor hygienic surroundings. One attack strongly predisposes to another.

The most important subject for our consideration is how we are to recognize the disease in the very young. It is not a difficult matter when we have the characteriseic fever, pain and swelling of the joints, but very frequently the attack is not very acute, the temperature is but slightly elevated, only 100 per cent., the pain and swelling very moderate and redness absent. These symptoms are often not severe enough to keep the patient in bed or even to the sitting posture.

This form of the disease is often followed by a permanent crippling of the heart by endocarditis and involvement of other serous membranes, the child having had previous attacks

and passed unnoticed, the parents and physician attributing the child's complaints to "growing pains" or something else.

In order to recognize rheumatism in a child one must free his mind of preconceived notions of the disease drawn from its manifestations in adults as very few cases correspond to the adult type of acute rheumatism. In childhood the disease is not recognized by one or two special symptoms but by the association or combination of a number of conditions. In determining whether or not any given set of symptoms is due to rheumatism we should consider first family history, second previous history of the patient as regards articular pains, joint stiffness, the wandering pains of damp weather and the so-called growing pains, also the previous existence of chorea, frequent attacks of tonsillitis, erythema, etc. The onset of the disease is usually acute and is characterized by loss of appetite, feverishness, swelling probably and redness of one or more joints. Pronounced redness and swelling is not so marked as in adults. The temperature and pulse are usually moderate, although in the beginning of the attack following the rule of acute infectious diseases a sudden rise of temperature to 103° or 104° is not uncommon, but the temperature and pulse soon fall several degrees. As the disease progresses the tongue becomes coated although not especially dry. The urine is diminished, high colored and very acid; on cooling it deposits urates. The chlorides are diminished. A characteristic symptom is a profuse and acid sweating having a sour odor. Later in the disease if the sweating is persistent the perspiration, according to Osler, may become neutral or alkaline. The joints as in adults are apt to be invaded successively.

In Severe Cases.—The child presents a picture of dread fearing the attendants will touch or try to move it. The pain is commonly not severe when the child is quiet, but is greatly increased if the part be pressed or moved. Anemia develops with great rapidity and a marked leucocytosis is present. The disease runs a varying course of from three to six weeks unless complicated by some other disease. In some cases an endocarditis may develop before other rheumatic symptoms, the endocardium being the first membrane to be attacked.

Delirium occurs not infrequently in cases of rheumatic fever but can often be traced to the toxic effects of over doses of the salicylates.

Rheumatism in children derives its chief importance from its relation to cardiac disease. Cardiac complications are so frequent and so serious that everything possible should be done to avert rheumatism from those who by inheritance are especially predisposed to it. The relation of the diet to rheumatism is very imperfectly understood, but it is certainly a fact that rheumatic children do much better on a diet composed largely of nitrogenous food; milk should be given freely in all cases.

The underclothing should be of flannel during the entire year—in summer the lightest weight being worn.

The feet should be carefully protected, and exposure in damp weather should be avoided.

The tendency to recurrence is so strong in this disease that a child of rheumatic antecedents who has shown in various ways mentioned, a marked predisposition to rheumatism, who has had an attack, even though a mild one, should, if possible, spend the winter and spring in a warm dry climate, or even remain there permanently. Otherwise in most such children it is only a question of time when with the repeated attacks the heart will become involved.

To avert the dangers of cardiac complications during an attack of rheumatism, or to limit its extent, there are two things which should be invariably insisted on: First, confine to the house and in a warm room every child with rheumatic pains, no matter how mild. Secondly, if fever is present, keep the child in bed while it continues, even though it may never be above 100° F. Absolute rest and equalable temperature—these secured, are unquestionably of more importance than anything else in protecting the heart during a rheumatic attack.

With these precautions, we must combine an early diagnosis. In very many, perhaps in most cases, the harm is done before the true nature of the disease is suspected, the symptoms being dismissed as of slight importance because the articular manifestations are not very severe. Children who have once had rheumatism should be closely watched during chorea and other diseases related to rheumatism, the heart should be frequently examined, and the physician should be on the alert for the first articular symptoms.

Aside from the measures just mentioned, the treatment of rheumatism in children is con-

ducted very much like that of adult life. In most acute attacks either the salicylate of soda, oil of wintergreen, or salicin should be given. As a majority of cases are not very acute, marked improvement is by no means always obtained by these drugs. Alkalies should be given in all cases; but particularly in those in which there is hyper-acidity of the urine. Either the acetate or citrate of potash or the bicarbonate of sodium may be used, or sufficient quantity administered to render the urine alkaline.

Quite as important as these drugs is the use of general tonics, particularly iron and cod-liver oil; they should be given not only between attacks to fortify patients against recurrence; but also in sub-acute cases, which are sometimes influenced very little or not at all either by salicylates or alkalies.

CASE OF FRACTURE OF THE SKULL IN AN INFANT FOUR MONTHS OLD; OPERATION; RECOVERY.*

By ISRAEL BROWN, M. D., Norfolk, Va.

On *August 6*, 1903, Bessie F., age four months and one week, fell off of a chair, striking her head on the points of a three-pronged bent fork, the only wound being three small punctures on the right frontal eminence, near the centre of the forehead. Seen immediately after the injury there were no prominent symptoms—only restlessness and crying.

August 7th, vomiting and crying the night before, with several convulsions; temperature normal, general condition good.

August 8th, no vomiting; temperature 99.5°; very restless. Attendants report convulsions on right side of body only. Some loss of sensation and motion on right side.

August 9th, convulsions increasing in frequency, and when seen were typical, and on right side only; temperature 101°; increased loss of motion and sensation on affected side; operation advised.

Child removed to St. Vincent's Hospital, where, under anaesthesia, on retracting the scalp flap, there were found three small puncture

*Read before the Medical Society of Virginia during its thirty-fourth annual session, held at Roanoke, Va. September 15-17, 1903.

wounds entering the bone. This portion of the bone was quickly trepanned with chisel and mallet, when two small punctures were seen entering the membranes of the brain. These were enlarged, and the brain slightly explored; the wound was then closed, with opening for drainage.

For a day or two after the operation there



was vomiting, but no convulsions. For a week there was sufficient escape of cerebro-spinal fluid to daily saturate the dressings. Sensation and motion returned quickly on the affected side, and the child went on making an uninterrupted recovery.

The accompanying photograph presents the appearance of the child one week after operation.

Glyco-Thymoline for Hemorrhoids.—Dr. Chas. Bauer, Philadelphia, Pa., reports the case of Mrs. M., age 40, who had been suffering from piles for a long time. Pain was excessive and sitting impossible. Operation was declined. Hence he directed a piece of flannel saturated with daudanum one part, and glyco-thymoline three parts, placed over the tumors, and an ice bag against it, to be renewed every hour or two. The relief was prompt. Enema was given in ten hours afterwards to clear the lower bowel of hardened feces. The following day piles were returned. Half pint of cold water containing two ounces glyco-thymoline was used every morning as an injection, which has relieved pain, fullness, heat and itching, and also constipation.

CASE OF MORPHOEA.*

By A. F. FINCH, M. D., Chase City, Va.

I have a case here to present to the Society, which is exceedingly rare. Indeed, one in the country districts so seldom sees this disease that I am too modest to name the disease, and have brought the case before you more for verification than to discuss. I have here a little girl ten years old, who has been under my care for the past ten months, with the rare disease, morphœa—a subdivision of scleroderma. The disease is characterized by one or more isolated points, bands or patches, which, at first, are pinkish and slightly elevated, surrounded with a distinctly pink areolo. These patches soon become white and yellowish, with a polished aspect, resembling alabaster. In this case, all of the patches are distinctly polished, shining and hard, the skin feeling dead, and apparently lifeless. The patches under the clothing are almost black, hard, and the skin is hide-bound, and very much thickened.

Symptoms are described by Shoemaker as follows: This disease was known as Addison's keloid. It presents a number of appearances as it develops. Usually beginning with one or more isolated spots, rounded, oval or elongated; in color, the patch is pink, whitish, yellow and dark brown. The surface usually being smooth and shining, like polished ivory, wax, or marble, looking like lard or bacon had been deposited under the skin. To the touch, a well-marked patch is firm, inelastic, brawny, and hide-bound, being pinched up with difficulty. The lesions may occur on any part of the body, and are not symmetrical.

The characteristic symptoms are: The isolated patches, waxy white, hard and a brawny feeling of the skin. Some authorities claim that this disease is the forerunner of scleroderma.

The course is chronic, with but little suffering, and the prognosis is not hopeful.

The treatment, in this case, has been Fowler's solution pushed to its full limit, with the elixir hypophosphites, comp. of iron, quinine and strychnine; locally using the static electricity. Some improvement has been noted, but very little.

Dr. Frank H. Beadles, Richmond, after looking over the case, confirmed the diagnosis, and recommended the X-ray, saying that in cases

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along with the tonic treatment the X-ray had been more beneficial than any other therapeutic agent used.

SLOUGHING AND DISCHARGE BY THE BOWEL OF THIRTY-ONE INCHES OF COLON; PATIENT RECOVERED.

By J. M. SHACKELFORD, M. D., Martinsville, Va.

I show you here a section of a colon thirty-one inches long, which sloughed off and was discharged through the bowel on the twenty-second day after the beginning of an intussusception. The patient was a woman forty years old.

There is nothing in the history of the case that differs materially from what we usually find in cases of cœlic intussusception, except the amputation by nature and the discharge of this immense piece of gut with the recovery of the patient.

with a simple ulcer with no adhesions, and one in which the chronic history indicates firm adhesions and many complications. In the former, there is little exposure of peritoneal surfaces, and a short incision is permissible; in the latter, a long incision becomes necessary, and much more erosion of the delicate membrane is called for.

There is also much in the method of examining the contents of the abdominal cavity when once the latter is opened into. It is not always wise to bring everything out for macroscopic examination, unless absolutely necessary. There is no gauze, no wet towel of any material, nor normal or artificial sponge but that will do some harm to the peritoneum. It may not be in the actual bruising or tearing of tissue, handled ever so carefully, but an element of shock is introduced that can sometimes be eliminated. Therefore, when a reasonably certain diagnosis leads the surgeon to think that a short incision will answer let him make use of it.

On the other hand, if indications are such that a long incision is likely to become necessary let no great amount of time be lost in making it. We should fix in our minds methods of examining the pathological lesions that may be present; that is, the more expert we become in examining conditions within the abdominal cavity (for instance not lifting the stomach out through the incision, if it can be avoided) the better. Each of us can probably call to mind the attitude of our anesthetist as follows: When working within the peritoneal cavity all has gone well, but as soon as we begin traction to deliver the mass he has quietly said, 'the patient is not doing so well,' and if at any point posteriorly the peritoneum is torn, as sometimes occurs with the gentlest manipulations, the shock is still more marked. When we are attacking the stomach, and feel somewhat in doubt as to our diagnosis, and at once realize that our examination is likely to be prolonged, it is good surgery to block off the cavity, holding the intestines well away from the field of observation by means of gauze veils, and not have any more of peritoneal surfaces brought outside or exposed than is absolutely demanded. I do not think soiling the peritoneum with fresh blood, or healthy bile, is particularly dangerous, but the contents or secretions from other mucous surfaces should be carefully avoided: Feces, gastric secretions, pancreatic fluid, infected bile, urine and all foreign substances are

Analyses, Selections, Etc.

Toilet of Peritoneum in Operations Upon the Stomach.

Dr. A. Vanderveer, Professor of Abdominal and Clinical Surgery in the Albany (N. Y.) Medical College, etc., read a valuable paper on this subject before the Congress of Physicians and Surgeons, at Washington, D. C., last May.

We must ever bear in mind the necessity of sufficient time being afforded, in doing the operation selected, to carry out carefully the proper technic of the peritoneum, and thus help to avoid the dangers that may result from imperfect drainage later on.

Proper attention to the peritoneum begins even before the abdominal incision is made. In the *correct diagnosis*, much depends upon the work to be done within the abdominal cavity and the handling of the contents. Traumatism of the peritoneum is to be avoided as much as possible; the length of the incision is of importance. There is a vast difference in dealing

*Read before the Medical Society of Virginia during its thirty-fourth annual session, held at Roanoke, Va., September 15-17, 1903.

fruitful sources of infection of the peritoneum—septic very likely in results. Therefore, when once we resolve to do any operation that is to involve the continuity of the peritoneum we should protect peritoneal surfaces with great care.

In doing resections of the stomach, intestinal tract, or similar operations, I am more and more impressed with the importance of bringing peritoneal surfaces in contact with peritoneal surface, with as little exposure of underlying tissues as possible. The peritoneum is very choice in its associations and does not tolerate well being brought in contact with anatomical structures differing in development and growth.

When leaving the peritoneal cavity cleanliness should be observed in every respect. If contents of hollow viscera have escaped, here we are justified in mopping out as carefully as possible peritoneal pockets and surfaces. Undoubtedly in some cases the cleansing with hot normal salt solutions becomes necessary but great care should be exercised that we do not carry offensive material to other peritoneal surfaces to do post-operative harm.

Special attention should be given to the peritoneum in the operation of gastrectomy, covering the denuded surfaces, particularly when there has been a free dissection of lymphatic glands and anatomical structures posterior to the stomach, and great care should be exercised in bringing together the surfaces of the peritoneum as cautiously as possible. If this latter is not possible then such cases are proper for careful consideration as to drainage.

When operating in the neighborhood of the posterior wall of the stomach, either for relief of pathological conditions or the repair of traumatism, ever have in mind that there is danger of oozing (serous, bloody or otherwise) and that we ought, in a few cases, to do a posterior drainage directly up through the lateral walls or through the peritoneal pouch, on the right side, or in some manner to establish a perfectly aseptic outflow of material that may accumulate and otherwise do great harm. Various forms of gauze drainage may be employed and will continue to be used by certain operators.

In closing the wound when there has been a large surface of the anterior wall of the stomach included in the sutures, I always feel easier to bring it close up under the abdominal wound, put in drainage of gauze, to be left for one or more days, and have no reason to regret hav-

ing done so. A combination of gauze, glass and non-compressible rubber drainage is desirable at times, when protecting the peritoneum.

We must ever remember that the peritoneum is our great friend up to a certain point, but if overcome in its phagocytic work then it becomes exhausted and no longer aids us in the recovery of our patient. We must keep it in a healthy, normal condition if possible.

In all our operations proper attention should be paid to the warmth of the peritoneal surfaces, and no sudden chill or exposures to cold permitted.

In the selection of ligatures, my own preference—perhaps this is due to my early education—is in the direction of as fine silk as can be used, although catgut is employed by some surgeons with success. I am always distressed when I see or hear of anyone using chromicised catgut. Buried sutures of silver wire I seldom find to be necessary.

Electricity in the Treatment of Chronic Deafness.

In a paper by Dr. George Z. Goodell, of Salem, Mass., on this subject, read before the 13th annual convention of the American Electro-Theopneustic Association, at Atlantic City, N. J., September 22, 1903, the author limited himself to chronic catarrhal otitis media in its various forms. For the treatment of this disease, interrupted, continuous and static electricity, high frequency currents, ozone, electrolysis, and the use of various apparatus energized by electricity had been recommended, as also various combinations of these. He has used mild currents of the interrupted and also the continuous current three times a week for months at a time, and had found that tinnitus was often relieved, and deafness helped at times. Static electricity is seldom mentioned for this condition, and high frequency currents have but few advocates. Ozone has been used with some success by pumping it into the middle ear. Ten cases were reported, occurring in the author's practice—in nine of which the interrupted current was used, with relief of the tinnitus and deafness in two cases, and no benefit in seven. In the other case (a recent one), high frequency currents were used, with no beneficial results up to the time of the report. Indeed, very little of permanency in results has been accomplished in this disease by electricity.

Book Notices.

Lessons on the Eye. By FRANK L. HENDERSON, M. D., Ophthalmic Surgeon to St. Mary's Infirmary, and the Christian Orphan's Home, St. Louis, etc. *Third Edition.* Philadelphia: P. Blakiston's Son & Co. 1903. Cloth. 12mo.. Pp. 205.

On the title page we find that this book is intended "for the use of undergraduate students." In reality, however, it is rather a book for the *general* practitioner. "Minute anatomy, the fitting of glasses, skiascopy, ophthalmoscopy and kindred subjects have been left out intentionally," as they belong to the specialist. But enough is left for the general practitioner. Four lessons are given on anatomy of the eye; another is on optics; another on refraction and physiology, and all the other chapters are on diseases or disorders of the eye that may fall under the care of the doctor—not a specialist—which do not require the use of the ophthalmoscope for diagnostic purposes, and they are numerous. The descriptions of such diseases—their symptoms, pathology, diagnosis, treatment, etc.—are given in plain, easily understood language, aided by illustrations whenever necessary. It is a work of such excellence that even the specialist may learn some practical lessons from it.

International Clinics. Edited by A. O. J. KELLY, M. D., Philadelphia. *Volume III. Thirteenth Series.* 1903. Philadelphia: J. B. Lippincott & Co. 1903. Cloth. 8vo. Pp. 305.

This "Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles" is taken up with papers on "diseases of the gall bladder and gall ducts"; on treatment of various diseases, as pneumonia, gastric cancer, carbonic acid treatment of rectal diseases, serum treatment of typhoid fever, etc.; on various subjects of medicine, as the malarial infections, clinical types of pneumonia, sudden death due to respiratory disorder, a form of leukæmia, intermediate in type between the lymphatic and spleno-medullary forms; and clinical evidence of myocardial damage in rheumatic fever. In surgery, we find papers on cocain anesthesia—operation for varicocele; on general anesthesia; asepsis and antisepsis; gastrotomy; concussion of brain; intra-scrotal tumors; and on the modern treatment of varicose veins. There is scarcely a practitioner that is not interested in one or more of the subjects named, and if he

reads these lectures or articles he is sure to gain some points of practical value to him.

Treatment of Certain Malignant Growths by Excision of the External Carotids. By ROBERT H. M. DAWBARN, M. D., Professor of Surgery and Surgical Anatomy in New York Polyclinic Medical School and Hospital, etc. The Samuel D. Gross Prize Essay, 1902. Philadelphia: F. A. Davis Co. 8vo. Pp. xiii-192. Extra cloth. \$2 net, delivered.

This valuable, original contribution to surgery shows the value of what the author styles "the starvation treatment" of cancers, etc., of the tongue, jaw, tonsils, etc. It is the result of over six years of personal study and trial of the means proposed, and the essay includes the results of operations on the carotids by numerous other surgeons with a like purpose in view. This original essay is compelled to attract the attention of surgeons the world over. Full details of the technique are given in the work. We regret not to find the book indexed, and the "table of contents" is too brief to permit the reader always to refer to the matter he seeks with readiness. But to every surgeon who undertakes capital operations, the book refers to a subject of such importance as to make it worth his while to read every line, page by page.

Progressive Medicine. Edited by HOBART AMORY HARE, M. D., Professor of Therapeutics and Materia Medica, Jefferson Medical College of Philadelphia, etc. Assisted by H. R. M. LANDIS, M. D., Assistant Physician to the Out Patient Department of Jefferson Medical College Hospital. *Volume III.*, September, 1903. Lea Brothers & Co., Philadelphia and New York. 1903. Cloth. 8vo. Pp. 398.

This volume of the "Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences"—to which was awarded the grand prize during the Paris Exposition, 1900—is taken up with consideration of diseases of the thorax and viscera, including the heart, lungs and blood vessels, by William Ewart, M. D., F. R. C. P., of London; dermatology and syphilis, by Dr. Wm. S. Gottheil, of the New York School of Clinical Medicine; diseases of the nervous system, by Dr. Wm. G. Spiller, Assistant Clinical Professor of Nervous Diseases in University of Pennsylvania; and obstetrics, by Dr. Richard C. Norris, Lecturer on Clinical Obstetrics, etc., University of Pennsylvania. A well arranged index helps the reader to refer promptly to advances, discoveries

or improvements regarding either of the subjects referred to.

Clinical Pathology of the Blood. By JAMES EWING, A. M., M. D., Professor of Pathology in Cornell University Medical College, New York city. *Second Edition. Revised and Enlarged. Illustrated with 43 Engravings and Eighteen Colored Plates Drawn by the Author.* Lea Brothers & Co., New York and Philadelphia. 1903. Cloth. 8vo. Pp. 495.

This "treatise on the general principles and special applications of hematology" in its revised form brings the book up to date. The chapters on technics, on serum test for blood, and on crioscopy have been made especially complete—so far as their value to the medical practitioner and student are concerned. Noteworthy additions have been made to the subject of leukemia, and the essential features of Ehrlich's theories on immunity are also added. It seems to us that it is unnecessary to take up so much space—between 35 and 40 pages of closely printed matter—with bibliography in a book having the purpose of this work, which is to be used by the practitioner as adopted as text book for the student.

Editorial.

American Roentgen Ray Society.

The fourth annual session will be held at the University of Pennsylvania, (Houston Hall of Houston Club of University of Pennsylvania) Philadelphia, Pa., December 9 and 10, 1903. Dr. James B. Bullitt, Louisville, Ky., *Secretary*, will furnish official announcement on application. Dr. Arthur W. Goodspeed, Philadelphia, is *President*; Drs. John B. Murphy, Chicago, and Wm. Jordan Taylor, Cincinnati, *Vice-Presidents*; Dr. Weston A. Price, Cleveland, Ohio, *Treasurer*; Dr. Henry K. Pancoast, University Hospital, is Chairman of the Local Committee of Arrangements. Besides the President's address, papers, etc., are announced as follows:—Pathologic Changes in Tissue under the Influence of the X-Ray—Dr. Wm. S. Newcomet, Philadelphia; Results of Roentgen Method in Diagnosis of Renal Calculus—Dr. Chas. Lester Leonard, Philadelphia; Two Cases of X-Ray Necrosis, presenting some Unusual Features—Dr. Clarence Edward Skinner, New Haven, Conn.; Skiagraphy of the Chest—Dr.

Henry Hulst, Grand Rapids, Mich.; How to Obtain Instantaneous Skiagraph of Thorax—Dr. Mihran K. Kassabian, Philadelphia; Development of the Skeleton, Radiographically Considered (Lantern Slides)—Dr. Preston M. Hickey, Detroit, Mich.; Therapeutic Effects of X-Ray, as Shown from Results of Treatment of 100 Cases—Drs. Henry K. Pancoast, Harvey Battle and Mr. Henry C. Welker, Philadelphia; Roentgen Ray Diagnosis of Obscure Diseases—Dr. Russell H. Boggs, Pittsburgh, Pa.; Dangers of the X-Ray Operator—Dr. John T. Pitkin, Buffalo, N. Y.; Developers—Dr. Gordon C. Burdick, Chicago, Ill.; Comparative Study of Fractures of the Extremities—Martin I. Wilbert, Philadelphia; Technique for Making Good Dental Skiagraphs—Dr. Weston A. Price, Cleveland, Ohio; Care and Use of of Static Machine—Dr. Henry E. Waite, New York, N. Y.; Stereoscope in Radiography—Mr. E. W. Caldwell, New York; Influence of Roentgen Ray upon the Blood of Normal Individuals (an Experimental Study)—Dr. Wm. Krauss, Memphis, Tenn.; Exploding Tubes—Dr. Henry K. Pancoast, Philadelphia; Treatment of Lupus and Epithelioma by the Combined Use of the X-Ray and Ultra Violet Light—Dr. J. N. Scott, Kansas City, Mo.

The Medical Examining Board of Virginia

Will meet in Lynchburg, Monday night, December 15, 1903, and examination of applicants for licenses to practice in Virginia will begin promptly at 9 A. M. Tuesday, December 16th. Let every one interested read the announcement on the last cover page of this journal.

American Electro-Medical Society.

The first annual meeting of this society will be held December 1-3, 1903, at the Masonic Temple, Chicago. This society, which already numbers over 150 members, has for its object "investigation in electricity and allied sciences, and the encouragement of their application to medicine and surgery, by the formation of district and local societies." Dr. T. Proctor Hall, Chicago, is secretary, who will furnish further information upon request. A number of distinguished authors have promised papers for the occasion.

The Seaboard Medical Association.

Will hold its next session in Norfolk, Va., December 15, 16 and 17, 1903. Dr. Lomax

Gwathmey, New York, is *President*; Drs. Mahlon Bolton, Rich Square, N. C., John E. Phillips, Suffolk, Va., Chas. T. Parrish, Portsmouth, Va., and I. W. Costen, Morehead City, N. C., are *Vice-Presidents*; Dr. Israel Brown, Norfolk, Va., is *Treasurer*; Dr. John Ro. Bagby, Newport News, Va., *Secretary*, and Dr. John C. Rodman, Washington, N. C., is the *Orator-elect* for the Norfolk session. This thriving Association is composed almost entirely of practitioners of Eastern counties of Virginia and North Carolina, and does good scientific work.

Sarah Leigh Hospital, Norfolk, Va.

This institution whose advertisement appears for the first time in this issue has already had a remarkably successful career during the few months since it was opened. The building was designed by the well known architects of Boston, Messrs. Kendall, Taylor & Stevens, who make a specialty of hospital construction. Messrs. Powers & Anderson, Richmond, Va., furnished the complete surgical outfit. No expense has been spared to make this hospital as perfect in every detail as any of its kind anywhere. Among its unique features may be mentioned its beautiful and thoroughly equipped operating rooms, its five large sun parlors and its handsome suites of rooms with private baths attached. This Hospital is under the charge of Dr. Southgate Leigh, with a corps of able assistants, trained nurses, etc. We invite special attention to the half-page advertisement which contains an electrotpe of one view of the building, etc.

St. Luke's Hospital, Richmond, Va.

This thoroughly up-to-date private sanatorium for surgical cases, etc., under the care of Dr. Stuart McGuire begins a new advertisement in this issue. St. Luke offers equal advantages with any hospital in the State, and at less cost than other first class hospitals in this city. Nothing has been spared that tends to the comfort of the patient. The building is practically fire-proof. Our readers are specially requested to read the new advertisement, which shows up the advantages of this sanatorium for those in need of surgical attention.

Toy Pistols the Subject of Resolutions.

In view of the fact that over 400 deaths re-

sulted from the use of toy pistols, blank cartridges, dynamite canes and caps, cannon crackers, etc., following the last 4th of July celebration, the Mississippi Valley Medical Association at their 29th Annual Session held in Memphis, October 7-9, adopted resolutions endorsing the conclusions arrived at in a paper by Dr. S. C. Stanton, of Chicago, to the effect that (1) the existing laws regarding the sale of the dangerous toys above mentioned should be enforced; (2) laws should be enacted prohibiting their manufacture and sale; (3) all wounds in which—from the environment—there is any risk of tetanus should receive open treatment; (4) antitoxin should be used immediately as a prophylactic; and (5) as a last hope, antitoxin ought to be injected after the symptoms have appeared.

During the past year, tetanus has appeared in two or three Virginia cities almost to the extent of being pronounced epidemic, and it was said that in each case the cause was determined to have been the toy pistol. These pistols, however, were of the blank-cartridge variety, and could also be used to fire the small 22-cal., or BB cartridge. Undoubtedly they are dangerous weapons and their sale should be stopped; but of the ordinary paper-cap pistol we are not so fearful, nor do we believe it is essential to cut short so unreservedly their use by our little men who find much innocent pleasure playing Buffalo Bill and the like. The paper-cap may once in a great while cause hurt, but not until the toy blank-cartridge pistol was introduced did we have all this trouble about tetanus.

As to blank cartridges, since they are necessary for military use, if for nothing else, their manufacture must be continued. It will be interesting to note the results of their use in the sham battles, etc., by the Regulars and National Guard of the States, as is hereafter required annually by the U. S. Government.

New Orleans Polyclinic.—Seventeenth annual session opens November 2, 1903, and closes May 28, 1904. Physicians will find the Polyclinic an excellent means for posting themselves upon modern progress in all branches of medicine and surgery. The specialties are fully taught, including laboratory work. For further information, address, New Orleans Polyclinic, Post-office Box 797, New Orleans, La.

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Original Communications.

THE LORENZ METHOD.

By EDMUND W. HOLMES, A. B., M. D., Philadelphia, Pa.,
Surgeon to the Samaritan and Methodist Hospitals, Philadelphia;
Consulting Surgeon to the State Hospital, Norristown, etc.

Lorenz, in my estimation, is one of the few distinguished guests from abroad who has really had something new and of value to impart to us.

It is certainly curious that of all our American physicians who have been to Vienna, and have brought us back tidings of that great city, its methods of life, its famous surgeons, its overcrowded clinics; many of whom have brought back with them new theories, new methods, new instruments, and even whole courses of lectures, not one has ever in my hearing mentioned *Lorenz*. His methods have been known, but the latest text books fail to grasp them. After a period of study and experimentation extending over more than twenty years he has given us no new surgical principle, but most magnificently has shown us the renewed reapplication of *old* principles.

To the bystander it is marvellous that infantile tissues can withstand such violent manipulation, but we can see and appreciate that it has taken years of patient exploration and trial to attain to such daring.

Let us glance briefly at the anatomy of the part involved. The hip is an enarthrodial joint, the head of the femur the ball, the acetabulum the socket, the cup being deepened by the cotyloid cartilage. The capsular ligament is of great strength, large, loose and baggy.

The "dorsum ilii" is the common congenital dislocation and is probably of congenital and not of traumatic origin, and in these conditions, the acetabulum may vary from a shallow disk to a mere vertical cleft; and the head of the femur, from an abnormally insignificant epiphysis to a wide ball flattened to the shape of a toadstool.

Following the displacement, the ligamentum teres may be ruptured or reduced to a thread, while the antero-internal part of the capsule, unbroken, is stretched over the face of the acetabulum, and perhaps is adherent to its edges. The head of the femur then hollows for itself a new depression in the soft tissues about the ilium. but in earlier life it does not induce very firm adhesions. Then the fascia lata the adductors and the hamstrings contract, more particularly the adductors, so that the faulty disposition of the limb will be found to be—the head upon the dorsum ilii, the trochanter flattened, the acetabulum empty and the capsule stretched sharply in front of it, the lower extremity shortened, the knee flexed and adducted over the other thigh.

In a double dislocation the condition is repeated upon the other side, the knees thus overlapping. As the child begins to walk the play of one knee over the other gives the waddling gait; the compensatory lordosis "the sway-back;" the shortening, the limp and uncertainty of movement; all of which increase with age, so that, it is said, in the adult locomotion becomes impossible. It is this prospective burden which justifies any measure of violence even to the risk of life.

From the time of Hippocrates the methods of replacement of dislocations have been by rope and pulley and such like appliances—the methods of violence. Bigelow, Smith and Kocher have of late years instituted manipulatory methods, requiring a correct anatomical knowledge of the part. It is curious that in these latter days, the pendulum in the hands of Lorenz, and of Allis, has again swung towards brute force.

The cutting operations in congenital dislocation have fallen into disrepute, and deservedly so, when you consider the failures, and when you realize what it means in extreme cases, the cutting of the deep fascia, of the adductors, of the muscles attached to the great trochanter

and to the tuber ischii, and the consequent risk of hemorrhage, shock and sepsis. Personally I know of no completely successful cases by the cutting methods, though I believe these uniformly unsuccessful results are due to the non-recognition of the importance of retaining the limb after operation in rectangular abduction, which factor Lorenz has so ably impressed upon us.

The first reapplication of sound surgical sense Lorenz gives us is, to release the head of the femur from adhesion to the surrounding tissues before attempting reduction, in which we must recognize the danger of laceration of artery, vein, or nerve, muscle, or fascia, and in so doing as there is no new principle, there is no new danger, apart from similar manipulation in any dislocation. But to attain success we must learn the lesson from him that while no undue violence is to be exerted, *all necessary force* is to be employed. At the Lorenz clinic we actually saw five able-bodied men tugging at the extremity of one unresisting child—successfully.

The second reapplication of sound surgical sense Lorenz gives us is in his *methods of retention* after reduction.

You remember, in your surgical studies the difficulty in fractures of the clavicle is not to replace the fragments, but "to keep them there." Well, Lorenz has enunciated not only the correct method of replacement of the hip, but "the how" to keep it there. I am sure this position of the limb in extreme abduction and extension kept in place with the plaster of Paris bandage, with the leg flexed at right angle to the thigh, is the real secret of his success, and the non-recognition of the importance of fixation in this position afterwards at least one of the causes of failure in the cutting operation.

The third principle, Lorenz prefers to operate between the ages of two and seven years—because the act of walking is necessary to form and increase the depth of the acetabular cavity. Before the age of two years the infant must not be neglected, manipulation and massage is of use up to the time of operation to prevent adhesions and excessive deformity. After the age of four, weight extension antecedent to operation may also be necessary.

You can see, therefore, gentlemen, that the Lorenz method is logical, clear, consecutive and scientific, based upon long years of experiment, study and experience.

Go with me now to one of his clinics: With the little patient under ether, Lorenz first demonstrates the deformity, then swinging the femur around to loosen up the adhesions of the femoral head, he pulls directly downward till the trochanter is below Nelaton's line; then he demonstrates the reluctant adductors, and with an assistant steadying the pelvis with both hands and may be with a perineal band pulling upwards and outwards, he abducts the thigh with one hand, while he smooths out the adductor fold with the other, thus with steady pull and pressure he tears the adductors through, about three-fourths of an inch from their pelvic attachment, persisting till the salient adductor ridge has completely disappeared.

Next, with the leg at first flexed at the knee, afterwards in full extension, he stretches the hamstrings by forcing the thigh over the abdomen till the foot touches the forehead; then with patient lying prone, with the leg straight out in the line of the femur, he extends the thigh till the heel touches the occiput; thus the adductors, the flexors, and the extensors, and the surrounding fascias, are in turn loosened up; and the loosening of the limb shown to all. Though the capsular ligament be not torn through it is no wonder Lorenz visually demonstrates that he can now replace the dislocated hip with one finger, the hamstrings upon the replacement becoming foreshortened in the new position causing flexion of the knee, which is one of his diagnostic points of successful reduction. But the end is not yet. The antero-internal portion of the capsular ligament remains stretched over the face of the acetabulum, so "using the head of the femur as a probe" he lifts the capsular ligament from its bed and in favorable cases the acetabulum is free.

As we have already stated, this acetabulum may be a well developed cavity or it may be merely a vertical slit. Now in most interesting fashion he demonstrates that the reposition is not stable; that flexion and adduction are inimical, abduction and extension the favorable factors, for replacement and retention—thus emphasizing his favorite dictum that he always prefers to replace by abduction and extension, which the funnel-like projection of the capsular ligament evidently favors.

After a final replacement of the head of the femur the thigh is brought in extension, in extreme abduction, the thigh at right angles to the

long axis of the body, and the leg pointing to the feet at right angles to the femur. The knitted drawers are now drawn on over "the scratch bandages," which are moved every day to restore tonicity to the skin; and after padding the bony points, plaster rollers are applied from the knee to the ilium of the opposite side, enclosing the perineum. After the plaster bandages are completely applied it is cut away from the perineal space and from the popliteal space to allow free motion of the knee joint. Nor is this all? After a few days in bed the patient is seated upon a stool and allowed to push himself about the floor, because motion is necessary to force the head of the femur upwards to hollow out the acetabulum; and the thigh thus placed at right angles allows the adductors to take on as long a splice as possible, and the extension elongates the flexor muscles. The stool is made as high as the tibia is long, and has wheels to facilitate movement.

At the end of six months the cast is removed and the limb is allowed to come down in adduction and flexion to a point where the head seems to have a tendency to slip upwards and backwards. Stopping short of this with the limb still in abduction and extension, but not so extreme as before, a new cast is applied for several months more, and on removal the same test used.

If the limb is firm in its capsule, in the acetabulum, manipulation is employed to strengthen the muscles, and the limb is gradually allowed to acquire parallelism with its fellow, which requires several months more, so that the successful cases require two years for cure.

But supposing the head still slips from the acetabulum, and you cannot retain it there, what then?

If it can be impressed upon either edge of the acetabulum it is a great gain. Nature's place upon the dorsum ilii is the *worst possible*, because it gives shortening adduction and flexion. Upon either side upon a line with the acetabulum even if not in the cavity, with the abduction and extension we will have a functional condition far superior to the original, so we may feel assured we can always improve our patient—never make him worse.

But what are the dangers? Death from shock, gangrene of the limbs, laceration of the femoral artery or of the great sciatic nerve, fracture of the femur, are said to have occurred; but these complications are rare.

If, as has been claimed, success is attained in 50 per cent. of the cases, in the remainder death itself is but a release from a terrible bondage, but the opportunity for partial betterment always justifies the attempt, though the risks, for the sake of the surgeon, friends and patient, should be fairly appreciated and fully explained. Lorenz is a *genius* because after long years of labor he has demonstrated a new application of familiar surgical principles, and a *benefactor of mankind* because he has shown us how to minister to the little congenital sufferers who, thus far, can be benefitted in no other way than by "the Lorenz Method."

2025 Chestnut Street.

DIET AND DRUGS IN NEPHRITIS.*

By WILLIAM S. GORDON, M. D., Richmond, Va.,

Professor of Principles and Practice of Medicine, University College of Medicine; Visiting Physician to Virginia Hospital, etc.

Although the kidney is comparatively small in size, its blood supply is large and its function important. It has an excreting and probably an internal secreting work to perform. It is a long-suffering organ and has a heavy burden to bear. Its health depends, in a great measure, upon the normal metabolic and depurative work of the liver, upon the state of the genito-urinary tract below the upper opening of the ureter, upon the cutaneous circulation and vaso-motor influences, and upon the absence of pressure and traumatism. Disease of the kidney may rapidly lead to destruction of life, or may persist for years without producing symptoms sufficiently marked to attract the patient's attention. On the other hand, the early restoration of function in some of the gravest cases of acute nephritis, and the slow but steady and resistless progress towards a fatal termination of most of the chronic cases impress upon the physician the importance of prompt diagnosis and treatment.

Inasmuch as the fundamental principle in the treatment of all diseased organs is to secure rest, and inasmuch as the work of the kidney is to eliminate certain ingredients of the blood, the retention of which would be injurious, it is essential in the management of nephritis, not only to maintain a normal composition

*Read before the Medical Society of Virginia during its thirty-fourth annual session, held at Roanoke, Va., September 15-17, 1903.

of the blood, but at times to so change the quality of the blood as to reduce its excretion-products to a minimum. Syphilis, lead-poisoning, and other infections or toxic conditions require, in addition, a specific or special treatment.

Since the quality and quantity of food and the use of alcoholic stimulants are acknowledged to be frequent and potent factors in the production of renal diseases, the matter of diet in nephritis is to be esteemed of prime importance. Dieting is not what the patient so often supposes it to be—starvation, but a regulation of food in such a manner as to rest the kidneys and, at the same time, adequately nourish the body. Nor should it be forgotten that a diseased kidney must be fed, and that no injury must be inflicted upon it by withholding what is required for its own vitality and the performance of any function at all. This truth necessitates a distinction in the treatment of acute and of chronic nephritis; in the former of which diseases complete abstinence from food for a while may be of great service, whereas in the other condition the blood must be enriched and the kidney nourished while its work is diminished.

Apart from the views of other observers, my own experience leads me to express the belief that gout and lithæmia, in whatever manner produced, are responsible for a large number of cases of nephritis. Those of us who have studied our cases carefully and watched the effect of irritants in the blood or urine can not escape the conviction that excessively acid urine, excess of solids, and especially the presence of crystals of uric acid and calcium oxalate can not fail, in the long run, to injure the delicate epithelium of the tubules and to stimulate the growth of connective tissue. In treating nephritis, therefore, it follows that a diet which promotes a normal reaction of the urine and prevents the formation of abnormal ingredients is clearly indicated.

Having attempted to lay down general dietetic principles, let us bestow some attention upon special articles of food. I recall a case of which a brother practitioner spoke to me—that of a young child suffering with acute nephritis, drinking a large amount of milk as an exclusive diet, but still losing a decided amount of albumin. I advised a diet of water and carbo-hydrates for several days, thus reducing to a minimum the amount of urea excreted. The result was prompt improvement. I have

recently had under my care a little girl who had scarlet fever a year ago, and who subsequently developed nephritis. Intermittent albuminuria persisted after the casts had disappeared. The milk diet adopted by the first physician who treated the case may have been serviceable in the acute stages, but the child was left anæmic and the albuminuria was not relieved. I discontinued milk, allowed with vegetables and fruits, chicken and eggs in moderation, administered iron, and sent the child to the mountains. At last accounts the albumin had disappeared and the patient was steadily improving. A third case is instructive—that of an elderly woman with a long-standing case of nephritis. I advised a diet mostly of milk. Constipation resulted and the albumin and casts increased. Complete flushing of the rectum and lower bowel caused a marked diminution of the albumin, and, practically, a disappearance of the casts. These cases convey their own lessons, and teach that an exclusive milk diet, so often recommended for nephritis, may do harm by being abused and furnishing too much urea, by causing constipation and absorption of toxins, by failing to supply the blood with sufficient nourishment, or by setting up lactic or butyric fermentation. The diet should be suited to the case, and a routine diet for all cases is unscientific and should be avoided.

On the other hand, we are all familiar with the benefit derived in a large number of cases of nephritis from a diet composed wholly or largely of milk. Abstinence from alcohol, tea, coffee, and cocoa and a partial or complete reduction of sweets and acids, with the use of alkaline waters, rarely fail to produce prompt and beneficial results, especially in acute cases and in the first stages of the chronic cases. Haig claims that gout is not primarily due to excess of acids and sweets, but that these articles do harm by causing acid fermentation engrafted upon pre-existing conditions due to excess of proteid food. However this may be, I am convinced that a large number of cases of nephritis, lithæmia, gout, oxaluria, and other allied abnormal states, are not cured or held in abeyance merely by cutting off the main articles of food or drink which Haig enumerates as the causes of uric-acidæmia. It is true that nephritis, once established, changes the composition of the blood and, consequently, of the urine; but it is all the more true that ab-

normal blood leads to abnormal urine, and that abnormal urine leads to renal disease. My own rule is to so regulate the patient's diet as to maintain a normal urine; and so long as the urine is normal the kidney will, in the large majority of cases, be healthy or show marked improvement. Even secondary causes will, under these circumstances, be for the most part inoperative. So much for general principles. The careful practitioner will make special adaptations and note his results by repeated urinary examinations.

There is one point regarding nitrogenous food which ought to be emphasized, and this is that fowl, game, fish and eggs should not be indulged in to excess because the patient has been prohibited the use of butcher's meat. There are cases in which all of the above-mentioned articles have to be cut out of the dietary. The injurious effects of eggs have been recently impressed upon me by the history of one of my cases. The young man was markedly lithæmic and for years had been the subject of an obstinate psoriasis. After months of treatment, largely dietetic, he returned to me with samples of urine which showed a specific gravity of 1036 and contained an abundant precipitate of calcium oxalate. The eggs which he acknowledged having freely eaten were prohibited, and in ten days the urine was in every respect normal.

Although I believe that hygienic measures are of paramount importance in the treatment of nephritis, I am not a skeptic on the subject of drugs. The more we study drugs and become familiar with their physiological action the more should we be convinced of their therapeutic value when intelligently employed. Their action is governed by certain laws which, in a measure, we are supposed to understand; and leaving out idiosyncracies and unreliable preparations of medicinal agents we may reasonably expect more or less success from an application of our therapeutics based upon the pathology and the correct diagnosis of the case in hand.

The value of diuretics in acute nephritis when urinary secretion has almost or entirely ceased is a contested point. Theoretically, they may be contra-indicated in many cases, and high authorities advise against them; but theories and the dictum of authorities often wane before facts. I can vividly recall two cases of scarlet fever occurring years ago in my father's

family and followed by severe nephritis and anasarca. The good old family doctor made an acetic extract of iron—so to speak—by dropping rusty nails into vinegar and drenching his patients with the potion. And I shall never forget how busy the attendants were kept carrying off the dropsy, and how rapidly the sick ones recovered. A year or two ago, I was called in consultation to a man suffering from acute parenchymatous nephritis. The kidneys had, apparently, stopped working, and nothing but the profuse diaphoresis maintained by the attending physician saved the patient from fatal uræmia. We concluded to give infusion of juniper and bitartrate of potassium. The result was magical; free diuresis set in, and the case rapidly went on to convalescence. Such happy results are often obtainable in chronic cases when the tubules become blocked. Irritating diuretics may do harm, but we are fortunate in possessing many agents which need not be mentioned but which are non-irritating and productive of the greatest benefit. In this connection, it is well to remember that an efficient cholagogue administered before the diuretic or in conjunction with it is a powerful auxiliary in the treatment. Free biliary secretion and open bowels are frequently sufficient to produce a prompt change for the better in the patient's condition.

The usefulness of diaphoretics, particularly in acute cases of nephritis, can not be questioned. Such remedies as spirit of nitrous ether and solution of ammonium acetate, and others, have their place; but for emergencies pilocarpus stands at the head for efficiency and promptness. Depression, it is true, may accompany its action; but used with caution and in cases of uræmia, with a strong and tense pulse, it is capable of changing the condition of the patient from one of imminent danger to one of comparative or complete safety.

I have already referred to the good effects of cholagogues. It is hardly necessary to mention the value of hydrogogue cathartics and salines both in acute and chronic cases, and to invoke their aid when dropsy occurs, or when diuretics and diaphoretics are contra-indicated or fail in their action.

Nitroglycerine is oftentimes invaluable. In acute cases of nephritis with high pulse tension and diminished flow of urine its place can not be easily supplied; while in chronic interstitial cases its influence upon the general and

upon the renal circulation is equally pronounced. The tolerance of this drug by many patients is noteworthy. When normal pulse tension fails and the heart-chambers dilate, the resulting passive congestion is to be met with drugs which force the blood through the kidney. It is here that digitalis is pre-eminent. In my own experience it has no equal, and there are few patients to whom it can not in one form or another be safely and successfully administered. Its substitutes, however, may be necessary and are not to be underrated.

Although the measures used in chronic nephritis are more hygienic than medicinal, there are certain drugs, outside of those employed in complications, which serve a good purpose. Among these, iron stands in the front rank, especially when anæmia has set in and the blood vessels need to be nourished and strengthened. As to the particular preparation of this agent, I confess to a growing confidence in the old tincture of chloride of iron of our fathers and grandfathers. Much depends upon the dose and its combination with correctives and synergists. Bichloride of mercury, dilute hydrochloric acid, and liquor of the chloride of arsenic are valuable auxiliaries, whose action, whether singly or in combination with iron, are oftentimes forcibly demonstrated in interstitial cases. In parenchymatous nephritis, with anæmia, dropsy, and deficient urinary excretion, the time-honored Basham's mixture can hardly be dispensed with, as it is both a reliable hæmatic and diuretic. It is encouraging to observe pale urine becoming normally colored under the use of iron, this effect being one which I always desire and endeavor to obtain, and which was very noticeable in one of the young children to whom reference has been made. When tincture fails, other preparations of iron can be used with advantage.

In uræmic convulsions, none of us doubts the efficacy of chloral hydrate and the bromides, but there may be those who would be disinclined to use morphia. For my own part, I do not hesitate to invoke its aid. It is the only drug which in certain cases will put the physician in command of the situation, and the patient is entitled to the relief or alleviation which it secures. I have never had reason to regret, on account of any injurious effects, the use of morphia when circumstances seemed to demand its employment. That it may do harm is undeniable, but unpleasant effects can be

prevented by not giving too large a dose. Veratrum viride is a remedy with which my experience is limited, although its virtues as a reducer of pulse tension and an internal bleeder are well established. In acute inflammatory conditions, with a strong pulse, the good results obtained from aconite must not be forgotten.

For the debility which, sooner or later, appears in all cases of subacute or chronic nephritis, recourse must be had to stimulation. The selection of the agent for this purpose requires discrimination. On account of the physiological relation of urea to ammonia, it is questionable whether the salts of ammonium may not, if too long continued, increase the production of urea—a result which is far from desirable when the secreting epithelium of the tubules is partly or wholly destroyed. Under these conditions a fatal termination is not far off; nitrogenous food itself makes the patient worse; and any drug which causes tissue waste or increased formation of urea in the liver is, if possible, to be avoided. Alcohol, so often the first cause of nephritis, may be beneficial especially in elderly people who are the subjects of gradual degeneration of the kidney. It is best to give it with food. In other cases, however, its regular use as a stimulant can not fail to react upon the system and intensify the symptoms which it may temporarily appear to relieve. Strychnine may be contra-indicated in excitable states of the nervous centres, but in such conditions the pulse is usually tense or strong and the drug would not be considered. Many are the times when it can be given with propriety and marked benefit. When the heart fails and the pulse grows soft, thin, and frequent, it is a powerful ally of digitalis. Taken all in all it is the best remedy in our possession for weakness and exhaustion of the nervous system, while its combination with the hypophosphates will sometimes produce results unattainable by either drug alone.

In conclusion, it is needless to add that it has not been my purpose to treat the subject exhaustively nor to discuss fully specific articles of food and specific drugs. On the contrary, my aim has been to call attention to the underlying principles which should be observed in treating nephritis with diet regulation and medicinal agents. The leading drugs have been mentioned in order to illustrate principles, and, with the same idea in view, refer-

ence has been made to certain important articles of food. If what has been written will stimulate to a deeper study of the physiological action of drugs and of the metabolism of food products in the body, and lead to a renouncement of that skepticism on the subject of medicinal therapeutics which is growing too common in our ranks, I shall be abundantly rewarded for the privilege of reading this paper.

8 East Grace street.

DISCUSSION,

Dr. W. L. Robinson, of Danville: I am fully in accord with the view of large doses of iron, especially the *tr. ferri chloridi*. This applies to the anæmic cases and chronic forms. Digitalis in large doses will accomplish much provided the stomach will tolerate it, if not give 3ss by bowel twice daily. Hot douch baths over back, by pouring 8 or 10 gallons in full stream at a distance of 4 feet fall. The massage produced equals in efficacy the heat.

While not in line with the title of the paper, yet with *Dr. Gordon's* approval, I will report two cases operated on which testify to the good effects in suitable cases.

One, a lady, who had a large floating kidney and had been condemned to die of Bright's disease. Her nausea, nervousness, etc., made life a burden. Incision in lumbar region and brought the kidney well up in the wound. Split the kidney and extracted a stone the size of a large bean. Stripped back the capsule and stitched to the deep muscle. Allowed to heal by granulation. Restored to perfect health.

Second case.—Indigestion, tympany, head symptoms threatening dementia. Large floating kidney. Operation and after treatment as No. 1. Results most gratifying.

Dr. M. D. Hoge, Jr., of Richmond, Va., said that unfortunately there is no known drug which would cure nephritis; hence our efforts are largely directed towards the complications and symptoms which arise—as for instance in acute nephritis. In this form, uræmia is to be feared; in the chronic parenchymatous form, dropsy and anæmia are so prominent, while in the chronic interstitial variety the heart must be carefully watched. While not all nephritics could live on milk alone, still this was the best food as long as it could be taken without upsetting the stomach. For the anæmia, harsh diuretics should never be used; here the safest plan is to eliminate by the skin and bowels. This is best done by the hot pack or hot baths,

and pilocarpine; hourly drop doses of tincture of aconite are very beneficial. To eliminate the poison quickly, salts in small repeated doses, bleeding and the injection of normal saline solution must be used. In chronic parenchymatous nephritis the patient should avoid much exercise, dress in flannels all the year in order to promote the skin function and when possible live in a mild equable climate. For the dropsy, such diuretics as citrate of potash, caffeine, digitalis, and small doses of calomel are very beneficial. For the progressive anæmia, iron in some form is required; as a rule, very large doses must be given, but well diluted; Basham's mixture combines both stimulating and diuretic properties; Vallet's mass exhibits iron in an agreeable and easily taken form; syrup of iodide of iron for its alterative and blood building effect is well known. In chronic interstitial nephritis the diet should consist largely of vegetables and fruits, avoiding starches and sugars, but encouraging fats. Nitroglycerine in gr. 1-50 often cuts short an attack of dyspnoea. For the heart, compensation should be encouraged by digitalis or strophanthus. To reduce the pulse tension, chloral hydrate and nitroglycerine are very useful.

SOME COMMON MALARIAL NEUROSES NOT DISCUSSED IN OUR TEXT-BOOKS.*

By R. BRUCE JAMES, M. D., Danville, Va.

In removing from one section of the country to another a practitioner of medicine is forcibly struck with the difference in types of diseases in different localities. It has been my good fortune to practice my profession in the grass grown hills and table lands of the Alleghanies, where hydra-headed malaria has never found its way; and also in the lesser hills of Southside Virginia, where it appears in many and varied, though not in its severest forms; and it is to some of the protean phases of this particular malady that I wish to call your attention for a few moments.

It is a common occurrence in a physician's life to be called by night or day to attend a case of labor which fails to come off—often

*Read before the Medical Society of Virginia during its thirty-fourth annual session, held at Roanoke, Va., September 15-17, 1903.

after hours of fruitless watching. It was an extraordinarily common thing in my present practice to be called up on these false alarms. So marked is the difference in this respect in the labor cases in the mountains of Virginia and those in Southside Virginia that I had concluded the women down east had lost the art of reproducing their kind with the proper amount of comfort to themselves and their attendant physician. Well do I recall the case of one woman who had a physician six full nights in attendance ere she gave birth. It is needless to say the physician who began this confinement did not finish it. He spent four nights in expectant and futile vigil, but declined the fifth. So, common occurrences of this kind made me skeptical till I met the following case:

Mrs. M., a young woman in third confinement. I was called early in the night; found patient in rapid and violent labor. I completed a hurried toilet and made an examination. To my surprise I found the first stage of labor beginning; os slightly dilated; neck an inch long, while from the character of the pains I expected to find labor nearly completed. She kept up these violent and agonizing pains for six hours, and her pains were peculiarly violent and distressing. She would bear down in the most heartrending manner, and this, I say, kept up for six hours. The womb would apparently harden under the pain, but a finger in the os gave no sensation of pressure from above. Now, in certain cases, where we have a dragging labor with feeble uterine contractions, ten grains of quinine administered will often work wonders, and speedily bring on delivery. So I gave ten grains of quinine, hoping to bring on uterine contractions. You can imagine my surprise when she promptly turned over and went to sleep. Then I realized what a trick had so often been played upon me by my new acquaintance, malaria. I put this case on quinine, five grains, *ter in die*, for one week. I heard no more from her until two or three weeks had passed, when I was called and she made a prompt delivery.

Two other cases I will report:

I was called to see Mrs. C. early one morning; midwife reported that she had been in labor since the day before, and had not slept at all during the night on account of the pains, and that the child was crossed. Examination showed os dilated one inch long; pains produced ab-

solutely no propulsion of the fetus, though the womb apparently hardened under the pain; child was in perfect position. Ordered ten grains of quinine to be given; called two hours later and found patient asleep; kept patient on five grains of quinine *ter in die* for four days; two weeks later child was promptly delivered after labor begun.

Case No. 3 was a young woman in her second labor. I was called at mid-day, and found patient in violent labor; midwife said she had been expecting the child to be born at any time for past two hours; the examination showed extreme tenderness over the abdomen. The os was slightly dilated, neck about one inch long; pains produced no propulsion; ordered ten grains of quinine; they had telegraphed for her husband, who was from home. So sure was I of the diagnosis of the pains being due to malaria that I had them to recall the telegram. The first dose of quinine quieted the patient in a short time. I kept her on quinine, five grains *ter in die*, for one week; in ten days she was promptly delivered after pains begun.

These are three typical cases of malaria producing false labor pains, though quinine is regarded in certain conditions as one of our best oxytoxics, I do not hesitate to give it in large doses when indicated in certain cases of pregnancy. My custom now is, if a patient who is expecting to be confined in the near future complains of annoying abdominal pains, and I suspect them to be due to uterine irritation, she is at once put on quinine, and most frequently nothing further is heard from her until labor sets in; which, thanks to the anti-malarial treatment, previously given, is usually comfortably accomplished, with the minimum worry and loss of time to physician and patient.

The familiar "sun pain"—a neuralgia of the facial nerves, so-called by the laity, on account of the regularity of its appearance at given hours, and which is most often cured by giving quinine in large doses some hours before the expected returns, is typical of malarial nerve irritation; and I take it that this periodic uterine irritation is analogous to the facial pains of malarial origin. Whether the irritation is central or peripheral is not clear, though in all probability it is entirely peripheral. Else we would expect abortions or premature labor from these attacks, but the pain does not seem to cause motor disturbances of the womb itself. The violent efforts of the patient at expulsion are

purely a reflex act, caused by pain in uterus. I have said the womb apparently hardens under the pain. But I am convinced that this is only apparent, and the apparent hardening is produced by the abdominal muscles in their effort to protect the underlying womb, which in these cases is extremely sensitive to pressure. If we follow the expectant treatment in these cases the pain will invariably pass off, only to return at the next malarial period, which may be twelve, twenty-four or forty-eight hours, or even seven days apart.

There is another class of cases in which *the bladder* is the victim of the selective powers of malarial poisons. In many of these cases the bladder is so irritable that the presence of the smallest quantity of urine produces exquisite pain, and compels a desire or an attempt to expel it. When the attack comes on in some cases nothing short of a hypodermic of quinine will give the patient comfort. The type varies from these extreme cases to those in which the call to urinate is frequent and more or less urgent.

To cite a case will quickest and best put the subject before you. In the spring of 1901 I was asked to see in consultation an old gentleman who had been suffering from vesical irritation for some weeks. His only symptom was an irresistible desire to empty the bladder at frequent intervals. This condition was not constant, but came on at apparently indefinite times. In the treatment of this case the list of vesical sedatives had been exhausted. His bladder was irrigated, sounds passed, and a most rigid diet imposed, with rest in bed, and still the old gentleman grew worse until he had become quite feeble and very much depressed. The urine was normal as to color, slightly acid reaction, and of moderately low specific gravity. He would have at times comparatively comfortable days, but his nights were always bad, but this for an old man with bladder trouble was to be expected. And yet the exacerbation was so great at this time as to suggest a periodicity. I suggested malaria as the origin of the trouble, and prescribed quinine, which gave prompt relief. The spring of 1902 brought on the same trouble, which was relieved by quinine. He removed from our town, but this last spring he wrote for the same prescription, saying the trouble had returned. Later I had a letter from him in regard to another trouble, and as he did not mention the bladder affection I am sure he was relieved.

A second aggravated case came under my care this spring in the person of a middle aged lady who had been suffering from vesical irritation every spring and summer for the past two years. She could get no relief, but when cold weather came on she was better. She had been persistently treated by competent men, but was not improved—in fact, was worse than ever before. Her urine showed no pathological change, nor was there any marked periodicity about the trouble. She was promptly relieved by anti-malarial treatment.

It is common to find several people in the same house or neighborhood suffering from this trouble. I saw four cases among the young men of one boarding house, in which they all had frequent and painful micturition. They had no discharge, nor history of specific infection, recent or remote; urine normal; alkaline and vesical sedatives had but little effect. Quinine alone would not cure, though it would have been beneficial. An acid solution of arsenic and quinine proved effectual in all of these cases.

The diagnosis of vesical irritation is made by exclusion—no discharge, no history of specific infection, no marked change in urine; there may or may not be marked periodicity. The trouble is quite common, and the druggists treat many cases not knowing the cause of the trouble; they empirically prescribe methylene blue. Now it so happens that this drug has powerful anti-malarial properties, and so they often hit the mark while thinking they have a case of specific infection to deal with.

Perhaps a larger and better understood class of cases arises from the nervous disturbances of the alimentary canal, due to malarial poison. The stomach, when so affected, shows one of two symptoms—either nausea, more or less continuous, rarely producing emesis, or pain either before or after eating, with much pain on pressure. In the small intestine we find much tenderness on pressure, a persistent accumulation of gas, and, of course, intestinal indigestion. When the large intestine is affected the symptoms are those of a profuse diarrhœa or perhaps a dysentery. It is rare that we find more than one of these conditions present at the same time. The stomach alone is affected or the intestine or the colon. When we remember that the pneumogastric nerve supplies all these parts it is remarkable that only one division of the same tract is affected simultaneously. These is, perhaps, evidence that the disturbance is only peripheral.

Now, as to the diagnosis in these cases, whether due to malarial poisons or to other causes, I can give no satisfactory information. Examination of blood would tell whether the patient had malaria, but the patient may have malaria, and not this particular manifestation of it. And so I am content to call attention to this group of cases and leave it to the individual physician to make his own diagnosis by exclusion or otherwise.

LYSSOPHOBIA—REPORT OF A CASE.*

By S. T. A. KENT, M. D., Ingram, Va.

I wish to present for your consideration a most peculiar and interesting case, which has recently come under my observation.

On the night of July 31st last I was called to see Thomas R., age 17, who had that day had a slight chill. I found him with slight fever, furred tongue, and he was very nervous—having had convulsive seizures at frequent intervals. During these convulsions he would whirl himself over and over in bed, requiring to be held to prevent his falling on the floor or otherwise injuring himself. Two days previous to this he had received a fall while holding the side of a wagon to prevent its upsetting. He was struck in the right groin, and had his right side and back severely wrenched, but no bones were broken, nor were bruises or contusions to be seen.

Diagnosis.—Hysteria induced by shock of fall.

Treatment.—Purgatives to empty bowels and bromides with chloral hydrate to quiet nervous system and produce sleep.

I saw him again August 1st. His bowels had moved freely; fever was gone; kidneys acting all right, but his nervous condition was worse. Convulsive seizures more violent. Continued bromides and chloral, but in larger doses.

August 2. He slept about three hours last night, but had become very violent and had to be tied with ropes to prevent doing himself or others injury. Paroxysms recurred about every 20 or 30 minutes. While the paroxysm is on him he froths at the mouth, snaps and bites

at objects that come near him like a vicious dog, snaps at flies when they come about his face. Between the paroxysms he is rational, knows nothing of what has transpired, and has some difficulty in swallowing fluids. Diagnosis changed to hydrophobia, Dr. C. D. Barksdale, of Brooklyn, Va., concurring.

His father and mother, who were away, came home, and I then obtained the following personal history: Had infantile convulsions at one year; healthy and strong until ninth year, when he had a fall from a stable loft, hurting right side and back severely, shortly after which he was sick and had a slight convulsion; no other sickness up to this time; has always been a bright, jolly boy. During October, 1899, he was bitten on the right arm near the insertion of the deltoid muscle by a rabid dog, which was killed the same day. His father informs me that he was bitten through his clothing, and that the skin was not broken, but the scars from the dog's teeth are still plainly visible. Around the scar the surface became purple, and the scar was inflamed, and a scab formed upon it.

August 3. Slept some last night. Strangers excite him. Sense of hearing very acute; could distinctly hear the ticking of a small watch in an attendant's pocket 10 feet away, or when without his knowledge the watch was placed on the mantel in an adjoining room 20 feet away he could still hear and locate the sound with the door closed between; he could hear and understand conversation carried on in a low tone of voice a hundred feet away—out of doors. He whines and howls like a dog, ending with a bark, very realistic, but he is bright and cheerful during lucid intervals.

August 4th. Slept 5 hours last night. Quieter to-day. Paroxysms not so severe; lucid intervals longer, but he is howling and barking exactly like a dog, at the least noise outside the room. During the paroxysms he will whine, growl and bark. He will catch a pillow or other small object pitched to him in his teeth and shake it like a terrier shaking a rat, will spring at a stranger coming into the room—snarling, growling and snapping, but evinces pleasure when a friend comes in. Sense of smell very acute, can smell a person passing the house 20 or 30 feet away. I could know by his actions whether it was a friend or stranger; he can smell a chicken or turkey walking around the house, and would follow its movements by turning his head. He became very much excited if

*Read before the Medical Society of Virginia during its thirty-fourth annual session, held at Roanoke, Va., September 15-17, 1903.

a dog came near the house, and could not be quieted until the dog was driven away.

August 5th. Slept fairly well last night. Has had fewer paroxysms to-day. Has been taking fluid ext. scutellaria in $\frac{5}{16}$ doses every four hours since the 2d. Senses of hearing and smelling still acute.

August 6th. Had only one paroxysm to-day, which was not severe. Found it necessary to change diagnosis to lyssophobia. The patient is getting well.

August 7th. No paroxysms; bright and cheerful; anxious to know why we have had him tied. Appetite good all along; bodily functions normal, except constipated.

August 8th. Released him, as he was to all appearances well.

He had no further trouble until August 23d, when he was taken at night with paroxysm, during which his father and mother became afraid of him and ran from the room, closing the doors. The patient ran over the floor on his hands and feet, growling and biting at the door facings; he stood up at the window and chewed one of the cross pieces in the sash nearly down to the glass. These paroxysms continued 4 or 5 days, with gradual decrease of intensity, and with slightly different ending from those of the first attack, in that he would pass off into a kind of stupor lasting from 15 minutes to two hours, during which period he would mutter and talk to himself, and while in this condition it was impossible to attract his attention. He was given the same treatment as during the previous attack, and at the present time seems to be entirely recovered.

There are several questions I would like answered in this case.

First. Is it possible that there could be in this man an attenuated amount of the specific poison of rabies, causing the scar of the bite to inflame in 1902 and causing the dog-like symptoms in his case. During the paroxysms he could not speak, his face and eyes had the expression of a dog when the paroxysm passed off that reminded me of a person waking from the hypnotic state. During these paroxysms his movements were so alert, his senses so keen that the imitation of a dog could be easily seen by the most careless observer. This was not a case of maligning, for I watched him carefully and long, and he could not have assumed and maintained the character so perfectly and continually day after day.

Second. Was it a case of pure lyssophobia? *The Twentieth Century Practice of Medicine* defines lyssophobia as "a morbid state produced by morbid dread of having contracted rabies."

In this case the boy had always been bright and cheerful—the very life of every company that he was in. His family never mentioned the dog bite to him, and if he ever had a morbid dread of fear of anything his family or friends never noticed it. Now, is it reasonable to suppose that a happy-go-lucky fellow of his years could have worried himself into such a morbid state without his daily companions noticing that there was something wrong with him?

It is beyond my power, gentlemen, to describe what I saw in this case, and as Dr. Barksdale, who saw him with me, expressed it: "If I had not seen him I could not and would not have believed that a human being could have taken on the actions of a dog so completely."

THE PSYCHOLOGICAL SIDE OF MEDICINE.*

By BITTLE C. KEISTER, M. D., Roanoke, Va.

In this age of scientific progress the attention of the medical profession seems so completely engrossed in microscopic pursuit of the wicked bacillus, the absolute and immediate excommunication of the appendix vermiformis, and the mechanical adjustment of bone deformities by the Lorenz method, that the mental factor in medicine has become almost obscure and obsolete.

Strange as it may seem, but few of our modern text-book writers on therapeutics make any mention of the psychological side of medicine, yet every other possible, and, I may add, impossible, aid to therapeutics is gravely discussed at length, including obscure organic extracts from nearly every glandular organ of the body of both man and beast; also of the various and peculiar forms of exercise of the muscular and glandular systems, under the names of mechano-therapy, massage, calisthenics, Swedish movement, mountain climbing, mud baths, foot racing, etc.; of every variety of light, heat and Röntgen ray, of patent foods of every conceivable formula and

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trade-mark, while scarcely one line is devoted to psycho-therapy.

If we turn from the text-book to the class room or hospital we find the same result. Students listen with rapt attention to the latest methods in antiseptics, the culture of micro-organisms, the use of antitoxins; they study the powers of phenacol, protargol, aspirin, and many other well advertised Teutonic drugs, they discuss keenly the rival merits of the diverse forms of splints, sutures, forceps, inhalers, anesthetics and various instruments of precision and the best methods of diagnosis. All these necessary and important factors in therapeutics are thoroughly exhausted, while at the same time the omnipresent mental factor is almost universally ignored.

We may attend clinics on functional nerve diseases where the mental factor is predominant both in cause and cure, and while listening for an hour to the physical signs established by tendon and skin reflexes, with trained and systematic observation, we fail to hear one word to show that the disease has had other than a purely physical origin, or that it can be cured by other than purely physical means.

Turning from the teaching to the practice, we cannot fail to see the natural result. That which is ignored in physiology is not likely to be admitted in pathology; what is never taught in the clinic is not often practiced in the sick room.

While the influence of the mind over the body, as well as mind over mind, is everywhere seen and felt, it is at the same time neglected and ignored in the hospital wards, in consulting rooms and by the sick beds, and hence the amazing spectacle so constantly seen of men laboriously trained in all the medical wisdom of the twentieth century, patiently investigating the causes of diseases, or earnestly considering methods of cure without a thought of the ever-present mental factor; and sometimes hardly realizing that the case is that of a suffering human being, but more of an object similar to a machine that is out of order and in need of a mechanical engineer to adjust or arrange the machinery.

It is becoming quite common at our medical societies in reading our papers to forget that a man as such still exists, while it is perfectly obvious that whole lives apparently centre round the appendix, the posterior nares and the ubiquitous mosquito.

Sir James Paget well said: "A physician's

exclusive duty should be to study men as men, to master the marvellous intricacies and dependencies of spirit, soul and body, and to be sufficiently skilled to know when and how to call on the one to help the other, and with such men the profession would be complete."

That distinguished scholar and writer, Dr. Alfred T. Schofield, of England, deliberately states: "The mind is the most important factor in any or all diseases to be considered," and woe betide the practitioner who fails to remember this in some of his obscure cases of dyspepsia, malassimilation, flatulency, gastralgia, nausea, dyspnea, neuritis, appendicitis, syncope, etc.

In spite of the general apathy of which I have complained, the psychological side of medicine is becoming recognized by some of the ablest writers and foremost leaders of the profession, among whom I may mention such men as Clouston, Gardiner, Tuke, Schofield, Gowers, Church, Brower, Mann, and our own S. Weir Mitchell.

Sir Benjamis Brodie remarked: "It is the business of every practitioner of medicine to study, not only the influence of the mind on the body, but also that of the body on the mind." A debilitated condition of the body may produce a weakened state of the intellect, hence the many and peculiar views and vagaries of some of our modern writers of text-books, etc.

Dr. Lockhart Roberson points out the fact: "That all who are engaged in the healing art must sooner or later learn to search out and understand the mental and moral, as well as the material causes of disease."

Sir James Brown says: "Medical psychology belongs to our whole medical profession, and no medical practitioner can afford to ignore the fact."

Among the many causes of mental and nervous diseases, and their increasing prevalence over all other diseases of this age, are the increasing demands on the brain powers to achieve fame and fortune, regardless of the pathological results to the brain centres. Another prolific cause of brain disease, intellectual weakness and nervous prostration may be traced to the high pressure process of our public school systems in overtaxing the brain centres of our youth, which may not become manifest or even noticeable until later in life.

Neurotic affections of both childhood and adults are rapidly increasing and multiplying with our civilization. The increasing nervous-

ness of this age is most clearly evinced by the connection with, and influence of, the nervous system on other diseases of the body, not properly nervous in their character. In diabetes, for instance, the nervous system is in intimate relation and this disease is often induced by mental anxiety and distress, or by sudden fear or shock. This disease, also Bright's disease, nephritis, granular kidney, cancer and heart disease, are all on the increase in the ratio of the increase of nervous diseases. The sympathetic system, which is largely controlled and influenced by mental emotion, causes functional diseases of all the parts, inflammations, many organic diseases, edema, exophthalmic goitre, angina pectoris, headache, jaundice and neuroses of the various organs.

Dr. Samson, in the *Twentieth Century Practice*, says: "Mental shock and protracted anxiety are prolific causes of morbid conditions of the arteries, producing artero-sclerosis, a disease that has become very common of late years among doctors, politicians and financiers. The emotion of anger is capable of increasing the blood pressure from fourteen to twenty-one cubic metres, and the corpuscles from three to four and one-half millions per m. m.

Dr. John Hunter remarked: "That athetosis, apoplexy and angina pectoris have long been known to be caused by emotional excitement.

The intellect can influence and produce indirectly hyperaesthesia, anesthesia, parasthesia and all varieties of special sensation. It can contract and relax muscles and cause both voluntary and involuntary movements.

Dr. Murchison said he was utterly surprised to find so many cases of primary cancer of the liver, uterus, breast and other organs caused by prolonged grief and anxiety. Dr. Bennett tells of the increased growth of fibroid tumors following constant worry.

The mind is a potent factor in contracting infectious diseases. It is a well known fact that physicians owe their immunity far more to this fact than to any special care they take of their persons toward warding off these diseases. Prof. Rolliston points out the well known fact that after a defeat in battle, an army of healthy soldiers readily succumb to dysentery, scurvy, malarial fever, etc.

Sir James Paget tells of a young man who had hemoptysis on his birthday for nine consecutive years, being quite free during the intervals,

but died of rapid consumption after his tenth anniversary. We might continue narrating instances of this kind where the mind is the causative factor in so many diseases, both functional and organic. We might also show how our civilization and modern modes of living are producing mental and physical weakness by the various agencies at work under the sanction of law. The conditions of modern life which act on our complex and excitable nervous systems have much to do in bringing about phenomena that perplex the physician in reaching a diagnosis and formulating a suitable course of treatment.

As previously mentioned, our modern systems of education are influential in promoting nervousness and in contributing to the increase of mental diseases. The general tendency of modern education on the young is to increase the activity and susceptibility of the nervous system by modifying the nutrition of the brain centres and over-stimulating their growth; and in fragile, sickly or badly nourished children inducing brain exhaustion, cerebral anemia, hysteria, and finally organic diseases. Growth must precede function, and if while the child is so young or delicate and the functional activity still feeble, we apply undue exercise or stimulation, the brain powers will never be brought to their highest degree of development. The whole future complexion of mental life is, in great part, determined by the impressions made on the sensory centres of the brain when they are undergoing development.

From a therapeutic standpoint we must aim in our systems of education at a harmonious development of body, brain and mind alike, and we shall then attain progress and health combined. After careful study and a thorough analysis of all these important facts with their pathological bearing toward bodily ailments we can readily see why the mind is in such intimate relation to the body.

Psycho-therapeutics is an important branch of the medical science, and is apparently in its infancy. Its power for good in the hands of the educated physician was never more pressing than to-day. There can be no doubt that if the mental factor in medicine had been properly recognized, studied and taught by our predecessors in medicine, quackery, witchcraft, faith cures, osteopathy, christian science, and other fakes would never have attained the position they hold to-day.

The modern doctor must understand the pathology and hygiene of the intellect if he would be successful in his cases of neurasthenia, hysteria, and the many other functional nerve diseases.

The neglect of the mental factor in medicine is a source of unpardonable weakness on the part of the medical profession. Our failure to appreciate this important fact in the past has been the one prolific cause of so much skepticism on the part of the public mind, and has driven millions of our good paying and intelligent patrons to seek relief at the hands of uneducated fanatics and hell-born quacks, who play their role under the guise of Christian science, osteopathy, faith cures, etc., etc. We must take a full share of blame for this state of affairs, and endeavor to make amends in the future for our neglect in the past.

If it is possible or even probable for such persons as Mrs. Mary Eddy and Mr. Alexander Dowie and others of less repute of their kind to cure disease through the influence of the mind, why should not educated physicians make use of this mental factor in medicine?

There have been undoubted cures of both functional and organic diseases wrought through the mind by these so-called religious fanatics. If there had not been cures made their theory and so-called science would long ago have died and been buried in oblivion. Instead of which, Mrs. Eddy boasts of a clientele of over two millions of educated, well-to-do Americans, and an equal number of the high blooded royalty of old Mother England. In New York Mrs. Eddy has a church that cost over one hundred thousand dollars, and it is crowded every Sabbath with an upper class of educated, well-to-do followers, who pay both homage and money to their apostolic healers to be cured of their bodily ailments.

Chicago has been turned almost upside down by one of these spiritualistic fanatics, who has the walls of the largest hall in the city decorated with crutches, canes and splints presented him by cured patients and patrons.

These wonderful and mystified cures are vouched for by the healed in every section of the country, and while they cannot be explained by physiology, yet they are nevertheless true. Christian science contains neither Christianity nor science, yet it shows plainly how the mental factor can be utilized, even by charlatans who continue to reap golden harvests from their followers, while the educated physician, with all

the scientific training and modern equipment that can be afforded him, stands off in silent amazement, exclaiming: "*What fools they are.*" Dr. Schofield says: "While most men are fools, still cures are effected by not only respectable quacks, but the most arrant knaves, and testified to by respectable people, including the clergy. Many of these cures are not lasting, many are trivial, but some are complete. We have distinguished men and professors in the medical profession, such as Charcot, of France, and names of honor and repute in our own country, who testify to cures of all sorts and kinds without medicine or physical means. All this may appear to some of my hearers as a "riddle" of the most perplexing kind, and when the last echo of the laughter of derision and the last curve of the smile of contempt have died away, there remains much to make the conscientious physician of this age *ponder, think, and act.*

In my judgment, every recognized medical school in this country should have a chair on psycho-therapy, including under this head psycho-physiology and psycho-pathology. Until this is done we need not expect to attain to the full function of our noble calling, nor obtain the honor that rightly belongs to medical science.

Further Remarks Upon Gonorrhea, Its Complications, and Our Responsibility in Authorizing Matrimony.*

By JOS. TABER JOHNSON, A. M., M. D., Washington, D. C.,
Professor of Gynecology, Medical Department of Georgetown University; Honorary Fellow Medical Society of Virginia, etc.

On the 30th of January, 1901, I read a paper before the Medical Society of the District of Columbia upon the "Complications of Gonorrhea in Women and their Prophylactic Treatment," in which I discussed the subject under the heads: "The importance of these complications; their frequency; their nature and variety; the so-called 'latent gonorrhœa' from an obstetrical and infantile standpoint; their prophylactic treatment."

The importance of the subject was shown from indisputable and overwhelming evidence that many women lose their lives annually from these complications, and that thousands lose

*Read before the Washington Obstetrical and Gynecological Society; November 6, 1903.

their health or become sterile from the same cause.

It has been pointed out, and with some emphasis, that its disastrous effects were not confined to the debased and outlawed classes, but that it too frequently wrecks a home and destroys an innocent and valuable life in the highest walks of society. Instances were given of the infection of youthful and trusting brides by their supposedly cured husbands.

The opportunities for the infection of men are startling if not appalling—and the sad fact forces itself upon our frequently unwilling attention, that they, through carelessness or ignorance, in turn infect their own wives, or other women with whom they have illicit relations.

From the best statistics I have been able to obtain, there are 300,000 women in this country leading lives of prostitution; and the estimate is made by health officers and the superintendents of police in 30 large cities, who make reports on this subject, that for every woman who regularly resides in a house of ill fame there is at least one, if not more, just as bad, who never or rarely become known to the police. This will give half a million, at the lowest estimate, of candidates for this disease in our country alone. Take the world at large, as we do in estimating the probabilities in other diseases, such as cholera or the plague, and the women in the world who have this disease to-day, or are liable to have it to-morrow or next week, may fairly be reckoned by millions. I learn that the average length of life of these women is only five years from the time they begin a life of prostitution, and that 40,000 of them die annually. While some die from the effects of dissipation, and the ordinary diseases incident to humanity, it would seem fair to assume that from 30 to 40 per cent. die annually from the effects of gonorrhea. I think Bland Sutton, of London, is correct when he states that gonorrhea is the chief cause of the sterility of the prostitute class. A gonorrhœal salpingitis, whether it goes on to suppuration and the formation of pus tubes and ovarian abscesses or not, frequently destroys the epithelial lining of the tube and so cripples the ovary as to render conception next to impossible. Sterility is, then, a very common, if not a universal legacy inherited by the female victims of this disease.

"The chief danger of gonorrhea in the female is the infection of the uterus and uterine ap-

pendages." "Gonorrhea is the chief source of salpingitis and pelvic peritonitis." Among other complications may be mentioned: Inflammation and suppuration of the vulvo-vaginal glands; urethritis; cystitis; ureteritis; nephritis, and pyo-nephrosis; proctitis; endocervicitis; salpingitis; ovaritis; tubo-ovarian abscesses; pelvic-peritonitis and general peritonitis; para-tubal, ovarian and uterine inflammation; puerperal complications and very destructive infantile ophthalmia.

It may also attack serous membranes and fibrous tissue, synovial sacs, bursa, tendon sheaths, pleura and the pericardium. Familiar illustrations are gonorrhœal rheumatism and ulcerative endocarditis. The peculiar germ of gonorrhea may reach near or distant parts of the body through the lymph and blood streams, and may penetrate the tissues and produce suppuration and cause glandular adenitis, especially in the inguinal region.

These are very grave charges to bring against any one disease, but one has only to consult recent literature to become convinced that they are only too true. I presume that it would be within the bounds of truth to state that there is hardly a single disease which we have to treat to-day which is capable of producing more suffering and sorrow both among the guilty and the innocent than gonorrhea.

The power of the gonococcus to infect another after an indefinite period, from the acute attacks, has been denied by some, but instances are not infrequent where the most disastrous results have followed the marriage of supposedly cured husbands months after all pains and discharge had ceased. One of the chief, and to my mind most important points for discussion in this paper, is, when, if ever, may we give our professional sanction to the marriage of a man positively known to have had this disease, and our professional assurance that the trusting and innocent wife will be absolutely free from danger of infection?

It is probably within the professional knowledge of every doctor in this room that wives have been infected with this disease by ignorant or careless husbands. In some instances these men have been assured by their physicians that they were cured beyond the danger of transmitting the disease to others. This assurance has been construed into a professional permit and sanction of matrimony. The physician may not have thought, when he gave this

opinion, that these gonococci were lying back behind a deep and only partial stricture, ready to spring into deadly activity upon the occurrence of venereal excitement or sexual excess. The doctor himself may not have known what we have the most abundant authority for stating now—namely, that (Dudley's "*Gynecology*," 2nd edition, p. 155) "the chief power of gonococcus for harm lies in the lasting vitality of the germ after apparent cure. The gonococcus may remain inactive in the mucous crypts, liable at any time, even while quiescent in the individual, to be communicated to another." Hence many an innocent and previously healthy woman, shortly after marriage to a man who supposed himself to have been cured of gonorrhea years before, may, by contact with the attenuated virus, get a destructive gonorrheal infection of her genito-urinary organs.

Wertheim (quoted in Dudley's "*Gynecology*," p. 155) reports that human serum agar is the best culture ground for gonococci. In this culture, at 40 to 43 degrees C., they retain their full reproductive capacity. A direct experiment from pure culture from a gleet discharge of two years' standing gave the following interesting results: (1) Attempted reinfection of the original urethra with this culture was always a failure; (2) the culture when transplanted to a coccus-free urethra produced typical acute gonorrhea; (3) infection from this, back again to the original urethra, gave a fresh gonorrhea, which, after a typical course of five or six weeks, again subsided into chronic gleet. Thus by passing the gonococci through another individual—that is, through a new culture ground—they become again virulent to the urethra which was invulnerable to them before.

This explains the fact that an apparently healthy subject of chronic or latent gonorrhea may infect his hitherto uninfected wife and become infected from her; that is, the gonococci passing through the new culture ground of the wife again becomes virulent for the husband. We now understand why the gonococcus, even after years of apparent cure, may regain its full virulence.

I will not enter into the discussion of the damage done in obstetrical cases by gonorrhea, further than to draw your attention to the fact that gonorrheal infection of puerperal women among the lower classes is according to Hirst, very common. (Page 631, Hirst Obstetrics.) But I do wish to impress upon you the lone fact

that out of the 58,000 blind persons which the last census discovered in our country, 15,000 innocent children are declared by our ophthalmological writers to have lost their sight from gonorrheal infection.

On November 11th, 1902, I read a paper upon "The curse of Gonorrhea," before the Southern Surgical and Gynecological Society at its meeting in Cincinnati, in which I said in part that preventive medicine will probably rank the highest among the medical achievements of the twentieth century. The wonderful results obtained by the improved technique and practice of modern antiseptic surgical methods, especially in the abdomen, mark the past century as one of the most remarkable in the entire history of medicine.

It is for the prevention of serious infections by the gonococcus of Neisser that I appeal to you, and through you to the great profession of which we all are members.

No more important question, I fancy, presents itself for consideration in the entire realm of practical or preventive medicine than this. When can we professionally sanction the marriage of a man known to have had gonorrhœa? Can we say, at the present time, when a man is cured?

Drs. Keermecker and Verhoogen, in their book published last year on "Chronic Urethritis of Gonococcal Origin," intimate that we cannot. They say that "the gonococcus may remain in the canal during the course of chronic urethritis—that is to say, during an indefinite time. Its virulence may then become attenuated, and only show itself by the invading character of the lesions and the obstinacy of the disease. It may also begin again, after a period, and thus give to the affection the acute or contagious character, which it had seemed to have lost. It is impossible to determine at what moment, the gonococcus having disappeared, the disease ceases to be transmissible."

And again: "When these facts will become better known to the profession, auto-reinfection by gonococci permitted to become latent in the deeper structures will become a rarer event, and the prognosis of gonorrheal infection in both sexes will be a more hopeful one."

In the chapter on chronic gonorrhœa and marriage, they say: "No doubt there is ample ground for the pessimistic belief of Behrand and his followers, that gonorrhœa is practically incurable, especially in the female, and they raise

and emphasize the question as to when we may pronounce a gonorrhœa cured? Nothing short of educating the masses to the perception of the great social danger which lies in an attack of gonorrhœa will mitigate its ravages and save hecatombs of wrecked lives in both sexes—but especially in women.”

That this subject is attracting more attention of late is evidenced by the favorable reception of Jullien's monograph upon “Libertinism and Marriage,” which has been honored by translation into English and German, and also by the three annual sessions of an International Congress of genito-urinary specialists.

The point, however, which I wish to lay the greatest emphasis on is that we should make ourselves much more certain in the future than we have done in the past that our patients of both sexes are absolutely cured, beyond the danger of a relapse, before we dismiss them from further observation, control and treatment. Our female patients should be so vigorously treated as to prevent, if possible, the extension of the disease beyond the vagina and the external parts. The question of “latent, chronic or residual gonorrhœa,” and its possible disastrous consequences, should be more constantly in mind when we are treating these cases, and our management should be so radical, thorough and complete as to prevent the occurrence of pelvic infection and adnexal complications. These cases should be no longer left to the care of drug clerks, medical students, and irresponsible persons to treat. Some hospitals still refuse, I am informed, to admit venereal diseases, and some physicians regard it as beneath their dignity to attend them. Patients are compelled, not infrequently, for this reason, and also on account of the high charges of good physicians, to consult unskilled persons and the advertising quacks. One of the consequences of this unwise course is that they are only half cured, and the patients with this disease are permitted to go about thinking themselves cured, and some of them will undoubtedly contaminate innocent persons. Not a few writers, in the light of advanced modern science, speak of gonorrhœa as being a much more serious disease than syphilis, especially in women. The day has gone by when it can be said, as we have all probably heard it said, that gonorrhœa was less to be dreaded than a bad cold, and that the well-advertised “three days' cure” would render the care of regular physicians unnecessary, etc. The difficulty of

a perfect cure has been recognized and emphasized by the most skilled specialists in this department of medicine. Our consciences, as well as our treatment, need revision in regard to the dismissal of gonorrhœal patients as cured so absolutely and permanently as to make marriage safe beyond the possibility of the contamination of the innocent wife. How long after the gonococcus cases to be found by the microcopist in the urethral secretions or discharges can we safely give our professional sanction to matrimony? This is one of the burning questions of the day, and should be considered with the greatest care and conscientiousness. Dr. Jos. Price says there are more and better reasons for locking up in jail a man with gonorrhœa than there is to incarcerate a common murderer. In one case there is only one victim, and that victim is dead; in the other there may be a dozen or more doomed possibly to suffering and sorrow during the remainder of their miserable lives.

In speaking of the frequency of gonorrhœa among reputable women, Dennis' System of Surgery, p. 771, says that “for many reasons this number is extremely difficult to compute. Such cases are probably numerous, and usually arise from infection from husbands who are themselves suffering from a chronic urethritis, the result of an imperfectly cured gonorrhœa of long standing. It is not generally recognized that in cases of chronic urethritis the gonococcus may retain its activity for two or three years.”

Kelly adopts (p. 35, Operative Gynecology) the statement of E. Wertheim, “that gonorrhœa is the most frequent cause of suppuration met with in gynecological practice.” Penrose, who takes a most optimistic view of the progress of gonorrhœa in women, says on page 441 of his text-book on diseases of women: “I have no intention of underrating the danger to the women of coitus with a man who is not entirely cured of a gonorrhœa or a gleet. The lives of a great many women have been ruined by marriage with incompletely cured gonorrhœal husbands, and that very few men in such a condition would contemplate marriage if they were aware of the danger to the woman which results from such an act.”

This is the point I have been trying to impress upon my brethren in the profession in the papers I have written on this subject. The honest men who come to us for an opinion as to whether they can safely marry are too often assured upon insufficient evidence that they are

cured and that they can perpetuate maternity without danger of infecting their wives.

Recent literature upon this subject is full of testimony not only of the consequences of this erroneous advice, but of our inability to pronounce a man cured until quite a number of years have elapsed since any objective symptoms have been apparent.

Evidence is not wanting of cases of infection of wives by their husbands anywhere from one to six years after the total disappearance of all symptoms of this disease.

The latent powers of the gonococcus for revivification under proper stimulation or irritation, are so great and so lasting that not a few writers express grave doubts as to whether we can ever professionally sanction matrimony for a man we have treated for gonorrhœa of the posterior urethra. Anterior specific urethritis in the male, and vaginitis in the female, are undoubtedly cured before any of the ascending infections and complications occur. In other words, prophylactic treatment has been so successful as to prevent the chronic deep-seated infections, which are so difficult to cure by any known methods of treatment.

In the discussion of my paper on the "Curse of Gonorrhœa," in Cincinnati, nearly all the speakers endorsed the position taken by the writer. Dr. Hugh Young, of Baltimore, said among other things: "We have a great and severe problem here to contend with; a great many times we must tell patients who are apparently well, who have no discharge from their urethras, who pass only a few shreds, that they cannot get married, regardless of how much we would like to see them marry the woman of their choice. It is a difficult problem, and one that has not been searched."

Dr. Young said he knew a case in Baltimore who had been treated by an excellent practitioner for three or four years; the patient put off his marriage for two years more, and finally the doctor, after examining carefully with culture and cover slips before and after irrigating injections, and finding no gonococci, told him that he could safely marry. Six weeks after the wedding his wife was brought in with acute tubal disease and peritonitis, requiring laparotomy and salpingectomy.

Dr. Noble, of Philadelphia, after saying that we all concede the importance of the subject, proceeded to relate two cases which he said were exactly similar to two cases related by Dr.

Young. "The two cases of Dr. Young of a violent acute condition arose from so-called latent gonorrhœa, and in the two cases I will report acute gonorrhœa was caused from latent gonorrhœa."

These two cases had gonorrhœa and were treated by an expert in genito-urinary diseases; both of these men were told they were cured, and finally got married. It was a year after the supposed cure before the question of marriage came up; they went back to the physician, who re-examined them carefully, both of them having been told they were perfectly well. Within a month after marriage the wife of one of them had a pus tube and the other salpingitis and peritonitis. I removed the appendage from both women. I feel at the present time that I cannot tell positively when a man is cured of gonorrhœa, and I would not be responsible for telling any man he could get married with absolute safety if he had ever had gonorrhœa. There is no way at present to tell so far as the man is concerned, and it is probably equally true of the woman. The longer marriage is put off, the less risk there is of conveying gonorrhœa. Dr. Noble closes his remarks by these words: "So far as I know at the present time, we have no means of positively telling men or women who have had gonorrhœa that they are well."

I wish also to draw attention to the fact that latent gonorrhœa may exist in both men and women without our being able to demonstrate it microscopically. In women the germ may be too deep in the pelvis to capture, and in men the means used may not succeed in bringing the gonococcus to the surface, and under the microscope Dr. Young reported such a case in a husband, who nevertheless infected his wife, and Dr. Sherrill, in the discussion above referred to, reported the case of a young lady seventeen years old whose family physician had made a diagnosis of gonorrhœal salpingitis. Dr. Sherrill's examinations of the secretions of the vagina showed the absence of gonococci; he therefore doubted the correctness of the diagnosis. In his operation, therefore, he opened and drained the tubal abscess through the vagina. The pus, upon examination, showed the gonococci. "This illustrates," he says, "that we may have a violent gonorrhœal process, and yet be unable to demonstrate the presence of the germ in the secretions from the urethra or vagina." Of course, if we find the germs the diagnosis thereby becomes evidence in all cases.

Further and abundant testimony might be introduced to show the difficulties and importance of the diagnosis, and especially the prognosis of posterior chronic specific urethritis in the male and of the very serious nature of the complications of gonorrhœa in the female, but it hardly seems necessary to do so. The two chief contentions in this brief presentation of this ancient subject seems to the writer to have been established beyond the possibility, as the lawyers say, of successful contradiction.

So impressed am I, however, with the dangers and complications of gonorrhœa in women, and also with those liable to arise from the marriage of men with latent gonorrhœa, that I cannot close this paper without a brief recapitulation of its main points.

1st. The opportunities for acquiring gonorrhœa are very numerous, there being at the least calculation half a million women in our country alone from whom it is possible to acquire it some time, and probably many times during their lives.

2d. That these opportunities are not neglected is shown by the statements frequently met by the writer during his recent investigation of this subject, that fully ninety per cent. of men do acquire it.

3d. The very serious pelvic complications possible to all women, wrecking their health or shattering their lives.

4th. The great number of abdominal sections required in the treatment of these complications necessarily leave the woman seriously mutilated, if not absolutely unsexed.

5th. The dangers of puerperal infections.

6th. The inexpressibly sad case of ophthalmia neonatorum, resulting in from ten to fifteen thousand cases of infantile blindness annually.

7th. The complications following gonorrhœal infections in men.

8th. The great difficulty of cure after reaching the chronic or latent stage in the posterior urethra; and

9th. Our very great responsibility in advising a man whom we have treated for gonorrhœa that he is so thoroughly cured that he can marry without danger of infecting his wife.

The American Public Health Association considered this subject at its recent meeting in our city, where a paper was read by Professor Ulises Valdes, of the National Medical College

of Mexico, upon "Measures to prevent the propagation of venereal diseases."

So much suffering, sorrow and so many deaths result from gonorrhœa, that I venture to predict that in the not very distant future the law will protect the innocent by requiring before the issue of a marriage license that a man shall present a medical certificate from competent authority that he cannot infect his wife or offspring with serious hereditary diseases, and including gonorrhœa.

EXSECTION OF HEAD OF COLON AND PART OF ILEUM.*

By A. H. BUCKMASTER, M. D., Charlottesville, Va.,
Professor of Practice of Medicine and Obstetrics, University of Virginia, etc.

In connection with the interesting case of amputation by nature of the long piece of colon reported by Dr. J. M. Shackelford, I want to report a case of extirpation of a part of the colon and ileum, which I had to remove for sarcoma of the glands lying in the embrace of the colon and ileum—so commonly found in the lowest animals, and in a rudimentary condition in man. There was a large mass about the size of a cocoanut. There had been ulceration of both the colon and ileum. I removed nine inches of the colon and seven of the adjoining ileum. The peritoneum was raised, and all enlarged glands in the neighborhood were removed. The patient was living one year after the operation, and as far as I know is living at the present time.

New Orleans Polyclinic.—Seventeenth annual session opens November 2, 1903, and closes May 28, 1904. Physicians will find the Polyclinic an excellent means for posting themselves upon modern progress in all branches of medicine and surgery. The specialties are fully taught, including laboratory work. For further information, address, New Orleans Polyclinic, Post-office Box 797, New Orleans, La.

*Read before the Medical Society of Virginia during its thirty-fourth annual session, held at Roanoke, Va. September 15-17, 1903.

SIX CASES OF STATUS EPILEPTICUS TREATED BY HYOSCINE HYDROBROMATE HYPODERMICALLY.*

By GEO. B. FADELEY, M. D., Falls Church, Va.

I wish to report six cases of status epilepticus treated by the hypodermatic injection of hyoscine hydrobromate, and to ask the members of this Society to give the drug a trial in this terrible condition.

The six cases referred to all occurred at the Virginia Training Schools at Falls Church, Va., Miss Gundry, proprietor. The dose administered in each case was one-fiftieth of a grain of the hyoscine hydrobromate, and was thus large because of the general irresponsiveness of these subjects to medication in doses ordinarily used with other patients. In the first of these six cases, the one-hundredth of a grain of the hyoscine was given in desperation after the failure of the ordinary means of treatment of the condition, and in about twenty minutes later another dose of the same size was given—the former dose having produced no visible effect. Inside of ten minutes after the second injection the convulsions abruptly ceased.

In the other five cases in which the drug was used, it was given in doses of one-fiftieth grain at first, with an almost immediate good effect in three of them. In one of the cases in which no effect was obtained, the attacks were Jacksonian in type, and confined to one lateral half of the body.

The stoppage of the convulsions in the above mentioned cases can be attributed solely, I am convinced, to the hyoscine hydrobromate, and in three of them no other treatment was used.

DISCUSSION.

Dr. W. E. Anderson, Farmville, Va., asked Dr. Fadeley: Do you use hydrobromate of hyoscine in 1-50 grain doses with children, and at what ages? Also, have the results been uniformly good? I have found it specially good in some cases, and in a good many, entirely useless.

Dr. Fadeley: Yes, they were all children. They ranged in age from ten to fifteen years. It is supposed to be hard on respiration, but I noticed no deleterious effect.

Dr. Anderson: From my experience, I would infer, either that the action of the drug is very unlike on different patients, or that it is unreliable in its preparation.

Dr. M. M. Walker, Montross, Va., considered the dose given by Dr. Fadeley a very large one. He had used the remedy frequently, and had very alarming symptoms to follow in a case of insanity in which he has used only one two-hundredth of a grain hypodermically.

TUBULAR PREGNANCY.*

By W. E. ANDERSON, M. D., Farmville, Va.

Six months ago, I was called to see a woman who was suffering with pain in the region of the left ovary, and having some hemorrhage. She gave other symptoms which caused me to make a diagnosis of tubular pregnancy. On announcing her condition and advising an operation, she declined, stating to me that she was already the mother of thirteen children and would prefer to take her chance without the knife.

One month later, I was again called to see her and found her having more hemorrhage, and suffering much more pain. Pain and tenderness on pressure over the left tube was acute. I could also feel the mass which I thought was in the tube, with more distinctness. I remained with her about twelve hours and treated her expectantly. At the expiration of that time, nature came to my relief and she aborted, the fetus and placental membranes coming away in a somewhat oval-shaped mass. The appearance of these discharges and her condition following confirmed me in the opinion that this was not a normal conception as to its seat, expelled voluntarily, and that the fruit of pregnancy must have been a short distance from the womb, in the tube.

I am happy to report a case where nature did so much when I could do so little. Had there been a rupture into the abdomen, the woman's life would probably have been lost, as she was very much opposed to any operation.

After the removal of alcohol, Celerina, given in doses of from one-half to one ounce every four hours, is said to be speedily followed by the most characteristic symptoms of improvement.

* Read before the Medical Society of Virginia during its thirty-fourth annual session, at Roanoke, Va., September 15-17, 1903.

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Analyses, Selections, Etc.

Veratrum Viride in Surgical and Obstetrical Practice.

Dr. Charles L. Bonifield, of Cincinnati, Ohio, in a paper on this subject, before the American Association of Obstetricians and Gynecologists, at Chicago, September 22-24, 1903, said that the physiological action of veratrum had been carefully studied by Dr. H. C. Wood, who says that "it is a cardiac and spinal depressant." Veratrum slowed the pulse, but the author did not believe that it lessened the force of the beat, when used medicinally, except it produced nausea. It stimulated the liver, kidneys, skin and salivary glands, and it lowered temperature and relieved inflammatory pain by its effect. These properties make it valuable in the treatment of localized peritonitis. In appendicitis the appendix should, if possible, be removed during the first twenty-four hours. When this could not be done, the Ochsner treatment should be given, supplemented by the hypodermic administration of veratrum.

Acute salpingitis was usually treated by hot and cold local applications to influence the circulation. These were valuable, but the circulation could be more profoundly affected with veratrum, and it was, therefore, more valuable. Local treatment could, however, be used at the same time the veratrum was, with advantage.

In the treatment of postoperative peritonitis free purgation was of the greatest importance, and should never be neglected. But in some cases, after the bowels had been thoroughly evacuated, the exceedingly rapid action of the heart indicated that that organ would exhaust itself before convalescence could be established. In this condition there was no drug equal to veratrum. It was superior to strychnine or digitalis, because, while they might stimulate the heart to act for a time with renewed vigor, it made the work of the heart easier, and gave it a chance to rest between beats.

Although veratrum had been used for thirty years in the treatment of eclampsia by a considerable number of practitioners without a fatality, it was acknowledged by everyone, who had given it a thorough trial, to be superior to chloroform, morphine, or any other drug in general use. Obstetric text-books almost without exception failed to recommend it with any enthusiasm. Valuable papers had been pre-

sented to the American Gynecological Society on the use of this drug by Jewett and Reamy; also, a paper by Dr. A. B. Isham, before the Cincinnati Academy of Medicine, on the general use of the drug.

The Factor of Heredity in Atrophic Rhinitis.

Dr. Lewis S. Somers, Philadelphia, Pa., in a paper read before the Pennsylvania State Medical Society, at York, September 24, 1903, stated that while it is probable that various factors play an exciting role in the etiology of atrophic rhinitis, yet three conditions presenting strong evidences of hereditary transmission are seemingly concerned as an underlying foundation upon which the development of the disease is essentially based, these being (1) certain deviations from the normal in the osseous framework of the nasal chambers; (2) a tendency towards localized epithelial metaplasia; and (3) as a possibility, the attenuated taint of syphilis or tuberculosis. That hereditary transmission plays some important part is shown by the presence of the disease in several members of the same family, and often extending through two or more generations, and by the very early age at which the disease first develops. A group of cases were reported consisting of a mother with atrophic rhinitis, which developed during her seventeenth year, and her three children, in whom the disease developed at the age of four, and two years, and 12 months, respectively.

The deviations from the normal in the osseous framework of the nose, consist of an abnormal width of the fossa and an antero-posterior flattening. The epithelial metaplasia consists in the transformation of the ciliated columnar cells into the flat, squamous variety, while the inherited pathologic taint is shown by the history of tuberculosis or syphilis in a number of these cases, in the parents or grandparents of the affected individual.

While it is not desired to take exception to the more prominent supposed etiological factors concerned in atrophic rhinitis, as, for instance, that it is caused by a specific bacterium; by congenital atrophy of the turbinates; by malnutrition, or tropho-neurosis, or that it is the result of infantile purulent rhinitis, of hypertrophic rhinitis, or of accessory sinus suppuration; but irrespective of whatever part these may play in the individual case, it is desired to emphasize the apparent fact that heredity plays an essential part in the vast majority of cases of this disease, and that this factor is exerted through the aberrant

nasal form, the epithelial metamorphosis and possibly by the transmission of an inherited pathologic taint.

Eye Affections Associated With Disease of Contiguous Bony Sinuses.

Dr. S. D. Risley, of Philadelphia, presented a brief paper during the session of the Medical Society of the State of Pennsylvania, at York, September 23-25, 1903, on affections of the eye associated with disease of the contiguous bony sinuses. He said that serious forms of disease affecting the nerve tract of the eye and leading to blindness, often obscure as to etiology, were secondary to the acute and chronic inflammations of the lining membranes of these bony cavities in the skull. That this was to be expected, since in the case of three of these cavities, the maxillary antrum, the frontal and ethmoidal sinuses, a portion of their walls go to form the walls of the orbit and are therefore separated from the orbital tissues by thin, bony partitions, through which, either by direct extension of inflammation in the form of a periostitis, or by way of the blood vessels and lymph channels diseased processes would readily involve both the tissues of the orbit and the eyeball itself. By way of illustration, he gave a brief clinical history of cases supporting strongly different forms of eye disease, which are plainly migratory in character, and where the loss of vision would probably have been prevented by an early recognition of the sinusitis.

Anti-Sclerosin in Arterio-Sclerosis.

Dr. S. Goldschmidt, Physician to Bad Reichenhall, contributed to the *Deutsche Praxis Zeitschrift für praktische Ärzte*, No. 19, 1903, his observations on this subject. The following is an abstract:

During the past few months I have had occasion to employ a remedy for which very good results in arterio-sclerosis are claimed, and which is called *anti-sclerosin*. It is composed of various blood salts, and is manufactured by W. Natterer, of Munich, who placed a quantity of it at my disposal. I have tried it altogether in 13 cases. I selected patients with advanced arterio-sclerosis, both central—sclerosis of the heart—and peripheral. The results show that the remedy is excellent, for its effects were not only symptomatic and temporary, but sometimes also permanent.

The first case was a man of 65, with marked sclerosis of heart and arteries. He complained of beating of the temples, *muscæ volitantes*, oc-

casional tinnitus, palpitation, etc. The action of anti-sclerosin was very surprising. After taking two tablets three times daily for 10 days all the troublesome phenomena disappeared. The pulse showed a diminution in hardness.

Case 2.—Aged 50. Very advanced sclerosis and arrhythmia of the heart; occasional pseudo-asthmatic attacks. Anti-sclerosin, same dose. Returned to home after 14 days. Condition has remained satisfactory.

Case 3.—Patient confined to bed. Pulse extraordinarily hard and slow, 60 to the minute. Heart enlarged in all dimensions; tone on auscultation loud and ragged. Loud murmurs at all the orifices and œdema of feet. Diuresis small; no albumin. Moderate emphysema, with a little catarrh. Digitalis. Eight days later, in somewhat better condition, anti-sclerosin. One week later œdema of the feet had disappeared, dyspnoea had gone and patient got up from bed. Now feels very well under anti-sclerosin and CO₂ baths. Cardiac murmurs remain. Heart configuration unchanged.

Case 4.—Widow of 68. Central and peripheral sclerosis, cardiac palpitation and rheumatoid pains. Anti-sclerosin for 10 days. Marked improvement in palpitation. Objectively no change was noticeable.

Case 5.—Aged 70. Very advanced sclerosis of heart and arteries. Mitral insufficiency. Anti-sclerosin for 3 weeks without effect.

Case 6.—Aged 52. Peripheral arterio-sclerosis. Hard pulse, of high tension, wonderfully changed by 10 days' treatment with anti-sclerosin, becoming soft and of normal tension.

Case 7.—Aged 68. Steno-cardiac difficulties. Had hypertrophy of the heart, peripheral and central sclerosis, emphysema of the lungs and widespread catarrh. Anti-sclerosin for 20 days. Since taking it there has been no steno-cardia. Objectively but little change is evident.

Case 8.—Wife of the foregoing, 67. Has peripheral and central sclerosis. There is a difference between the two radial pulses. Arrhythmia. Marked emphysema. Pleuritic friction sounds. Anti-sclerosin 10 days without effect.

Case 9.—Female; aged 68. Formerly suffered with asthma. Advanced central and peripheral sclerosis. Arrhythmia. Emphysema. Angina pectoris. Four weeks' anti-sclerosin had a notably mitigating effect on steno-cardia. No objective improvement apparent.

Case 10.—Arrhythmia, central and peripheral

sclerosis. Mild but distinct teno-cardia. After having taken iodine preparations for a considerable time without any especial effect, he was put on anti-sclerosin. Its influence on the anginous attacks was unmistakable. There was no demonstrable objective effect.

Case 11.—Very advanced sclerosis of the ear drum. Anti-sclerosin for 14 days without effect.

Case 12.—Neurasthenic who had arterio-sclerosis. He complained of paroxysmal attacks which aroused suspicion of angina pectoris. Did not want to take the tablets at all, but finally took them distrustfully, and maintained that they increased steno-cardia.

Case 13.—Countess M.; 61. Sufferer for many years from arrhythmia, and far advanced sclerosis of the heart and arteries. (Edema of the lower extremities. Steno-cardiac attacks. September 10th, anti-sclerosin. On the 15th she had a fainting spell lasting several minutes. When she regained consciousness amnesic apnoea had appeared. The question: Had the apoplexy any connection with the anti-sclerosin? I can positively answer in the negative. On the 18th the patient indicated pains in the head and the heart. Anti-sclerosin, which had been stopped for 3 days, resumed. Two days later the heart became quieter. Arrhythmia was noticeably less, the cardiac contractions were much more regular, and the pains had disappeared. Ice bag and the Leiter apparatus had been used in addition to anti-sclerosin. No more complaints of steno-cardia. The cerebral trouble is slowly improving.

In all cases the dose was 2 tablets thrice daily, an hour before meals or with meals. The former method should be used if the latter does not give results. Diet consisted mostly of vegetables, with little or no alcohol. All kinds of baths were given. The favorable effects were doubtless due to anti-sclerosin. In some few cases the iodine preparations might have done as well, but would have been slower in action. Iodine has, besides, unpleasant by-effects, which prevent its use in very many cases. There were no such idiosyncratic phenomena with anti-sclerosin.

Diagnostic Point in Appendicitis.

At the Jonesboro meeting, 1903, of Arkansas State Medical Society, Dr. Leonidas Kirby, Harrison, Ark., called attention (*Amer. Jour. Surg. and Gynec.*, Oct. 1903) to an important sign in the diagnosis of appendicitis, which he has found invariably present:—Patient is made

to lie upon his back with lower limbs flexed, and feet resting on the bed, the knees being steadied by a third party. With one finger over the origin of the appendix—a little external to McBurney's point—press down with as much force as the patient will well tolerate; while keeping up this pressure with one finger, palpate and examine other parts of the abdomen. Much, if not all of the pain complained of in other portions of the abdomen will have disappeared—the patient merely suffering where the one finger presses. As soon as this finger is removed, other tender points will reappear upon examination of the abdomen, as usually made.

Editorial.

The Medical Examining Board of Virginia

Will hold its semi-annual session at Lynchburg, Va., December 14-17, 1903, for examination of applicants for license to practice in Virginia. We cannot too highly commend the Board to the continued favorable esteem by the profession, not only of this State, but of all others. This Board has wisely adopted a system of examinations on certain branches of undergraduates who present certificates of suitable proficiency from reputable colleges on those branches. But in this case the applicant has to get a marking of 80 per cent. on such so-called "partial examinations" in order that the markings may stand to his credit when he comes up, after graduation, for final examination.

We would be glad if each class for examination would adopt "the honor system" during examinations, and thus free the high minded, honorable young man of the unpleasant feeling that he is being watched as a suspicious character. The "honor system" in days gone by did prevail in certain of our colleges, etc., and the high type of honor prevailed in professional circles as the result. Further information is given as to this fall and winter session of the Board on the last cover page of this issue.

Uniformity of Records of Vital Statistics.

At the recent meeting of the American Public Health Association, held at Washington, the Committee on Vital Statistics reported that effective co-operation had been instituted between that association, the Conference of State Boards of Health, the American Medical Association, the United States Census Bureau and the United States Public Health and Marine Hos-

pital Service for the improvement of the vital statistics of this country. Among the objects sought are the extension of adequate methods of registration, the use of uniform and comparable tables and rates in bulletins and reports, and the improvement of the international classification of causes of death. A pamphlet on "Statistical Treatment of Causes of Death" has been issued by the United States Census Bureau, requests for which should be addressed to Mr. W. A. King, Chief Statistician for Vital Statistics, Census Bureau.

It has special reference to the difficulties encountered in compiling deaths returned from several causes, and asks for the co-operation of the profession in framing a thoroughly satisfactory method of procedure in such cases.

Charlatanry in Cities.

We are surprised somewhat that physicians should pay serious attention to a certain circular emanating from a so-called 'sanatorium' of this city, enclosing blanks, asking them to fill applications to become members of its staff. The very wording of the circular brands it as quackery of the lowest order. It claims to have "a large number of the best Richmond specialists" on its staff. The "best Richmond specialists" referred to must be quacks or charlatans, for we know of no reputable physician or surgeon connected with the place. The names of reputable physicians and surgeons of Richmond can be found by examination of the annually published register of the Medical Society of Virginia, and none of these is on the staff of the self-styled "sanatorium."

Moore's Brook Sanitarium, Near Charlottesville, Va.,

Is just such an institution as has long been needed in this section—"a home for the private treatment of mental and nervous diseases, alcoholic and drug habitues," where the resident physician lives with and dines at the table with the patients. The location is "Monticello"—the home of President Thomas Jefferson, and within sight of the homes of President Monroe, Vice-President Stevenson, and many others famous in American history. The genial climate and beautiful scenery, etc., which drew these great men to Albemarle—"the county of octogenarians"—still remain; and these considerations of health and life prompted the selection of this locality—within a mile or so of the University

of Virginia. The water supply is from mountain springs in an uninhabited mountain shed, and thence piped all over the buildings, where all plumbing fixtures are of the most approved pattern. The ability of the resident physician and the eminence of the consulting physician in the special line of duties belonging to him assure the best of medical services. We refer all interested to the advertisement for further information.

Southwest Virginia Medical Society

Held its last meeting of the year 1903 at Bristol, Va.-Tenn., on October 5th-6th. In the absence of the president, Dr. W. H. Bramblett, Dr. P. B. Green presided. There were 32 members present, and the meeting was a delightful and instructive one. Papers: "Atypical Typhoid," Dr. W. B. St. John; "Is Cancer a Disease of Locality?" Dr. S. W. Dickenson; "Early Recognition and Management of Tuberculosis," Dr. G. M. Peavler; "Observations on Diseases of Nose and Throat," Dr. J. H. Delaney; "Clinical Reports of Atypical Typhoid," Dr. P. B. Green; "Clinical Report of Walking Typhoid," Dr. W. H. Copenhaver. All papers were freely and originally discussed. Nine new members were elected. Next meeting at Wytheville, January 12th and 13th, 1904. New officers: Dr. M. M. Pearson, of Bristol, President; First Vice-President, Dr. R. W. Sanders, of Max Meadows, Va.; Second Vice-President, Dr. E. H. Hubble, Chilhowie, Va.; Secretary and Treasurer, Dr. E. T. Brady, Abingdon, Va. Executive Committee: Drs. A. S. Priddy, W. B. St. John, and W. W. Chaffin. Efforts were initiated to get every reputable practitioner in the section members of this society. There are now seventy-five members. A motion was made to be acted on during the January meeting to reduce the number of meetings to two a year.

Pennsylvania State Board of Health and Vin Mariani.

According to *Monthly Cyclop. Prac. Med.*, September, 1903, an excellent law was enacted by the Legislature last spring, "regulating the sale or prescription of cocain, or any patent or proprietary remedy containing cocain." The State Board of Health submitted the question as to "Vin Mariani" to the analytical chemists, Prof. Sadtler and Dr. Gentt—the samples examined being purchased by them in drug stores of their own selection. The analysis showed that "Vin Mariani" contained no cocain.

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Original Communications.

CANCER OF THE STOMACH.*

By HUGH M. TAYLOR, M. D., Richmond, Va.,

Professor of Practice of Surgery, and of Clinical Surgery, University
College of Medicine; Surgeon Virginia Hospital, etc.

If we accept the fact, as stated by Ewald, "that 35 to 45 per cent. of all cases of cancer, involve, the stomach;" and by Lockwood, "that next to the uterus, the stomach is more commonly the site of cancer;" and by Einhorn, "among all of the organs of the body the stomach is most frequently affected with cancer," and the further facts that cancer is increasing in frequency—the higher the civilization the greater its increase, that it is of unknown origin, always difficult and often impossible to diagnose in its incipency, that it is relentless in its demand for the patient's life and is only amenable to early surgical treatment, if at all so, then we cannot fail to be impressed by the importance of this subject. It has been said that cancer stands alone as a striking example, in which preventive medicine has been powerless to arrest its progress; even its actual increase has not been prevented. The very timely suggestion has been made that one of the dangers of the hour is too much specialism, *i. e.* physicians are too exclusively students of medicine while surgeons confine themselves too strictly to surgery. The best results in surgery implies an early diagnosis; *qui bene diagnoscit bene curat* is common experience. The intelligent physician has the first opportunity to make an early diagnosis, a failure in this, the stitch in time cannot be taken and too often the operable case, through delay, becomes inoperable.

The surgeon has been designated as a good physician who operates. The importance of co-operative work by the physician and surgeon

was never more marked than at the present time, and in no field of medicine is this more conspicuous than in morbid condition of the stomach.

The purport of this paper is to emphasize,

1. The value of co-operative study on the part of the physician and surgeon in diseases of the stomach.

2. The difficulty, usually the impossibility, of making an early, special and differential diagnosis.

3. A plea for a more frequent resort to an exploratory incision for diagnostic purposes.

4. The limitation of surgery in malignant diseases of the stomach.

The cases here reported are only interesting in connection with the inquiries:

1. Are there any positive and absolute methods of recognizing malignancy of the stomach in its incipency?

2. Are there not other morbid conditions of the stomach and adjacent organs the complex symptoms of which cannot be differentiated from malignant disease?

I envy the man, who is not harassed by a knowledge of the possible occurrence of atypical cases. The experienced abdominal surgeon is not surprised at the number of surgical surprises disclosed by frequent exploratory incisions.

Dr. Jonas in his address on surgery, New Orleans meeting American Medical Association, says, "Surgical advancement in the future will not consist so much in the radical changes in the operative technique as improvements in diagnosis and diagnostic aids. Many of our diagnostic formulæ are even now undergoing complete change, and the future will lead us to a precision in the recognition of disease we little dream of now. The early recognition of malignant disease is a problem of future development especially malignancy affecting the internal organs. With our present aids it is impossible to recognize internal cancers sufficiently

*Read before the Medical Society of Virginia during its thirty-fourth annual session, held at Roanoke, Va. September 15-17, 1903.

early to do a radical operation. Our only course at present is an exploratory incision, as soon as reasonable grounds for malignancy exists."

Brinton's terse description of cancer of the stomach, "Obscure in its symptoms, frequent in its occurrence, fatal in its event," is as true to-day as when enunciated.

Osler says, "At the pylorus it may be difficult to distinguish between cicatricial thickening about an ulcer, hypertrophic stenosis and annular scirrhus. (Lectures, *Diagnosis of Abdominal Tumors*, page 66.) It may in fact be impossible to decide the question; it may not be possible to reach a definite conclusion.

Einhorn believes, "Cancer can rarely be diagnosed before adhesions have taken place with other organs or before metastatic deposits have formed elsewhere."

According to Ewald, "Cancer of the stomach is an exceedingly insidious disease and at the outset is not to be distinguished from other affections of the organs which lead to dyspepsia."

Musser says, "Gastric cancer may occur without any symptoms whatever, and be discovered after death from other causes. The most common and distinctive feature is a sudden onset of gastric symptoms without evident cause in a person beyond middle life."

That good old word dyspepsia, like malaria, scrofula, biliousness, etc., we fear is a blanket which has cloaked and continues to cloak many wrong diagnoses.

It will be noted that in each of the following cases the earliest symptoms were diagnosed and treated for those incident to dyspepsia and even the late symptoms, could only be known, positively, to be the product of malignancy, after the disclosing of an exploratory incision.

Case I.—Male *aet.* 41 seen in consultation with Drs. A. L. Gray and W. H. Parker. Negative history except symptoms leading to a diagnosis of "subacute gastritis from fermentation." When I saw him a tumor as large as two fists occupied the epigastric region. He had no vomiting, comparatively little pain and was able to walk to my office to see me. An analysis of his stomach contents by Dr. Gray disclosed absence of hydrochloric acid, the presence of lactic acid. An exploratory incision disclosed a cancerous mass involving the free border of the stomach and extending nearly from the cardiac to the pyloric end. In concluding a report of this case Dr. Gray wrote, "The points of interest in this case are—1st, The patient's age. 2nd,

The small degree of constitutional disturbance, there having been at no time hematemesis, distressing nausea nor severe pain, neither gastrectasia nor gastropotosis was present in any marked degree. The patient's appetite was fairly good throughout, both, prior and subsequent to the exploratory operation." This patient lived only a month or six weeks.

Case II.—Referred to me by Dr. W. K. Gatewood, of West Point, Va., was sudden in its onset, rapid in its course and presented atypical symptoms except for repeated hematemesis. On the night of a violent conflagration in West Point, the patient, a male, *aet.* 60, vomited for the first time and in the vomited matter there was a little blood. For several years he had experienced occasional attacks of indigestion. For several days after the beginning of the acute attack he vomited whenever he took anything on his stomach, had slight fever, but only little pain. Palpation through a thick abdominal wall gave the impression of slight enlargement. It was impossible to say if it was the pylorus, gall tract, pancreas or enlarged retro-peritoneal glands. The patient was fed exclusively by the rectum but the gastric symptoms became progressively worse, repeated and freer hematemesis occurred. An examination of the stomach contents disclosed blood, hydrochloric acid, no lactic acid and no Opler-Boaz bacilli. A diagnosis of gastric ulcer was made. An exploratory incision disclosed carcinoma involving the pylorus with many perigastric adhesions, fixing the mass, and widespread glandular infection. Presumably this was one of the many instances of cancer engraftment in the site of an old ulcer. This patient lived only a few weeks.

Case III.—Seen in consultation with Dr. Merchant, of Manchester, Va. Male, *aet.* 30 with negative history, except symptoms pointing to prolonged dyspepsia. Vomiting of a unique character was conspicuous. It was unique in that it gave no pain; ingestion of food was unattended by pain. He would only vomit about once in twenty-four hours, and then a large quantity, presumably all he had taken in his stomach in that time. An appreciable tumor could be felt in the region of the pylorus. The diagnosis lay between malignant disease of the pylorus and gastric ulcer with thickening and adhesion, and possibly peri-gastritis or possibly cholecystitis and peri-cholecystitis and displacement of the pylorus. There was slight gastropotosis and dilatation of the stomach. At no time

was there hematemesis or pain. An analysis of the stomach contents was negative. An exploratory incision disclosed carcinoma advanced of the pylorus and retro peritoneal gland infection. This patient lived only a month or six weeks.

These cases are like so many met with in general practice. In each instance gross structural changes with minor and certainly atypical evidences to suggest them. I do not think we need dwell upon the inquiry, can we as a rule diagnose in its incipency carcinoma of the stomach? United experience of a number of able clinicians sustains fully the conclusion that we cannot. We can only exceptionally make the early diagnosis. It is practically useless to make the late.

Is this last assertion true? One of the brightest pages in the achievements of modern surgery is that which records the treatment of morbid conditions of the stomach benign in character. The most discouraging is that which records the radical and palliative treatment of malignancy. The operations for malignant disease are practically limited to pylorotomy, to partial and complete gastrectomy, to gastro-enterostomy and exceptionally in cancer of the cardiac end in gastrotomy. It is an open question if the statistics warrant the performance of these operations in a majority of cases. The average duration of life in carcinoma of the stomach without operative intervention is from six to twenty-four months. It is not clear to my mind that life is either prolonged or rendered more bearable by radical treatment. The key to an improved situation, is an earlier diagnosis than we can now make with the means at our command. An early exploratory incision in doubtful cases seems called for, and to this end we would urge co-operative study of suspicious cases by the internal medical man and the surgeon.

I do not wish to appear pessimistic as to the surgical treatment of cancer of the stomach. It is the radical treatment of cancer in its advanced stage that is so disheartening. It is to be hoped that the work of the internist and the surgeon will soon point the way of making an early diagnosis. When this does occur then the surgical treatment of cancer of the stomach will be put on the same footing as the surgical treatment of cancer in other parts of the body.

Reginald Fitz in a recent paper on "Some Surgical Tendencies," practically condemns

operative treatment for malignant disease of the stomach.

Mayo Robinson, of England, writes, "My own results in gastro-enterostomy for malignant disease have given a large mortality and unsatisfactory palliation of short duration."

W. I. Mayo, of Rochester, Minn., writes, "I regret to say that with few exceptions the palliation has been of such short duration as to hardly justify the operation," and he adds, "The hope of the future for cancer of the stomach is early exploration and extirpation."

2 North Fifth Street.

PHYSICAL FINDINGS OF PULMONARY TUBERCULOSIS.*

By ROBERT F. WILLIAMS, M. A., M. D., Richmond, Va.,

Professor of Materia Medica and Therapeutics, and Clinical Lecturer on Practice of Medicine, Medical College of Virginia.

The usual physical signs of a well developed case of pulmonary tuberculosis are too generally well understood to deserve consideration before such an audience as this Academy, and to undertake a full discussion of all the physical findings of the disease would be an abuse of your time and a trial to your patience. In attempting, therefore, to fulfill the duty assigned me, to present you a paper on this very extensive title, I shall limit my remarks to those points in the physical diagnosis by which the disease may earliest be detected, with certain details of technique, by the practice of which physical signs are better developed, and to some other diagnostic means which give evidence through physical conditions.

The importance to the patient of early diagnosis is momentous, but it is here that the greatest difficulty is met with, in the incipient stage before consolidation occurs, for there is no well defined sign by which the diagnosis may be made. Confusion may arise, too, from the normal differences in the two lungs from structural causes, where the right apex is the suspected area, and this in my experience is much more frequent than primary affection of the left apex.

Because I have experienced difficulty in such instances, I think it may be worth while to con-

* Read before the Richmond Academy of Medicine and Surgery, October 27, 1903.

sider for a moment these normal differences as a basis for what is to follow. The differences are observed by palpation, percussion and auscultation, and consist in increase of vocal fremitus, a slightly higher pitched and shorter note on percussion and more or less bronchial quality added to the vesicular murmur together with some increase of the vocal resonance on the right side as compared with the left.

The cause of this difference in signs is the difference in the size and position of the bronchi, the right bronchus being larger and situated higher than the left, thereby encroaching relatively more on the space occupied by the vesicular structure of the apex than the left bronchus does. This gives a little thinner layer of vesicular lung tissue to be penetrated on the right by vibrations in the bronchus while the larger size of the right bronchus and its more direct communication with the trachea enable it to transmit intenser vibrations than occur in the left. The fremitus is increased, therefore, in two ways, by the greater vibration as a cause of fremitus and by a shorter route for it to travel in transmission to the hand.

That resonance on percussion is produced by vibration set up in the vesicular structure of the lung and that the neighboring bronchi play little or no part in this sound is, I think, definitely shown by the fact that the pitch of a note over the lower part of the lung is lower than over the upper part near the large bronchi, but here no large bronchi exist and the vesicular structure is relatively far in excess of the bronchial structure as compared with the upper part of the lung. Such a condition could not exist if vibrations from the bronchi formed an audible component of the sound produced by the stroke. The vibrations in a bronchus caused by the action of the vocal cords in speech travel by a direct column of air without interruption to any given point; yet even this forcible vibration cannot be perceived so well in the lower parts of the lung where the vesicular structure so greatly preponderates. Much less, then, could we expect to perceive vibrations set up in a bronchus by percussion when we consider the interruptions that exist to the transmission of these vibrations from the percussing fingers to the bronchus from which they must again make their way through the more superficial vibrating vesicular structure before they can be perceived as audible sound. And when we further reflect that the gentle vibrations produced by the dis-

tributed air entering into the air vesicles can produce a volume of sound sufficient to smother the sound produced by a rushing column of air in the bronchi during respiratory activity, it seems logical that an intense vibration of the vesicular structure as produced by the percussion stroke should effectually obliterate any evidence as sound of vibrations in the bronchi, which are by physical laws weaker on account of their relative position to the exciting cause. The difference, then, in the pitch of the apical notes is explained by the difference in the amount of vesicular tissue of the two areas, the right being higher pitched than the left because the amount of resonant tissue, responsive to the vibration of the percussion stroke, is less.

The characteristic quality of bronchial breathing is more or less heard, mixed with the vesicular breathing, because the sound produced in the lesser amount of vesicular structure on the right fails to drown the coarser vibrations of the larger right bronchus, while on the left the bronchial sound cannot penetrate audibly the greater amount of vesicular sound. Vocal resonance, being identical in cause and transmission with vocal fremitus and differing from this only as to the manner of its perception, is increased for the same reasons. This normal difference in these signs further increases the difficulty of diagnosis because it is not of a fixed degree, but varies between fairly broad limits as anything depending upon the physical structure of individuals must do.

The value of the different methods of physical diagnosis in developing evidences of the disease in this incipient stage may be stated as follows:

Inspection.—The ordinary methods of inspection are not of great value for definite signs. A phthinoïd chest wall, of course, like a bad family or personal history, give added importance to suspicious signs. Lagging of the suspected apex on expiration may be visible, but this is usually difficult to estimate when slight, and will probably not be evident before other definite signs are demonstrable. Lessened excursion of the diaphragm on the affected side is an early sign of value demonstrable by inspection. The sign is known as Litten's phenomenon or Litten's diaphragm shadow. The patient is placed on his back with chest bared and feet pointed directly toward a window which must be the only source of light in the room. The observer, sitting at the patient's side, will see, on inspira-

tion, a narrow shadow, about half an inch broad, descending rapidly in the axillary line from about the 7th to the 9th or 10th rib and ascending on expiration to disappear at the point of its original appearance. The inspiration must be forced to develop this sign. It is never absent in health except in very fat persons or where through stupidity or wilfulness, deep inspirations cannot be accomplished. Normally, the excursion of the shadow will be from $2\frac{1}{2}$ to $3\frac{1}{2}$ inches according to the degree of forced inspiration. The phenomenon is observable on both sides and sometimes in the epigastrium. It is due to the descent of the lung border into the space between the diaphragm and thoracic wall as the diaphragm rolls away from the thoracic walls on inspiration. In early phthisis the excursion on the affected side may generally be observed to be diminished as compared with the other side, the difference being due to lessened elasticity of the lung or pleuritic adhesions of the affected side. Of course, other conditions which would impede the lung movement must first be excluded, such as old basal pleurisy with adhesions, effusion into the pleura, abdominal tumors, etc.

Percussion.—In this stage percussion may give no evidence whatever of alteration from the normal, but often a slight diminution in resonance, with increased resistance to the pleximeter finger and a slightly higher pitched note, may be developed. Or this note may have a slightly tympanitic quality due to lessened tension of the walls of the vesicles through relaxation produced by hyperemia. When present this sign is of great value, especially when associated with auscultatory changes hereafter mentioned. Attention to the manner of percussion is of great importance, and both forcible and light percussion should be performed for thorough examination, especially when the right side is the suspected area. I recently saw a case in which the note on the right side, under light percussion, was not higher pitched than might be explained by the normal structural differences, while on forcible percussion the same area gave a lower pitched note than the corresponding area on the left side. This could only occur, with the other signs present, by a slight consolidation lessening the vesicular resonance and so allowing the deeper resonance of the right bronchus to play an audible part in the production of a lower pitched note. A helpful point in detecting slight differences is observation in the al-

teration in pitch during percussion with the mouth open and shut.

Auscultation.—Crackling rales, heard at the end of inspiration, are of grave significance if persistent, that is, if heard over the same area on two or more occasions, and not disappearing when the patient coughs. Full inspiration or coughing will develop this early sign, and it may occur as a single rale which is sufficient for the recognition of this sign. The observation of the sign often requires the closest attention. When the rale is single, it often sounds as a distinct and rather metallic click which is by some authorities held to be pathognomonic. Moist rales heard persistently in one apex are a very suspicious sign and will frequently be followed by the development of the characteristic signs of consolidation.

Another early sign of importance, when present, is cog-wheel or interrupted respiration, the interruptions being synchronous with the pulse. The former explanation of this phenomenon as being due to aspiration during ventricular systole or to actual interference with lung movement through adhesions with the pericardium, is not satisfactory, for the phenomenon is often observable at the right apex and upper part of the right lung—points too distant from the heart to be affected in this way. Dr. Otto Hennsen, in the January number of the *Journal of Tuberculosis*, gives a rational explanation of the sign in the assumption of a hyperemia of the lung tissue as a cause of the interrupted breathing, in that a local impediment is given to air entering the finest bronchioles by the systolic capillary dilatation in the midst of a hyperemic, inflamed lung area. This sign is frequently observable at the margins of infiltrations and other conditions in which hyperemia exists, which would lend color to the assumption of hyperemia as a cause. Many experiments with tuberculin in suspected cases, in which local reaction occurred, developed this sign, which further verifies the hypothesis as the known reaction of tuberculin is the development of local hyperemia. When, therefore, this sign is observable in either apex, in the absence of previous local disease, it points strongly to the hyperemia of beginning tubercular infection. From two to four interruptions may be distinguished during inspiration as a rule, because the expiratory blast is too forcible for their perception, but occasionally may be observed on expiration. Diminution in the force of the respiratory murmur,

a little loss of its breezy character, a little harsher quality than normal and slight prolongation of expiration are important and suspicious signs, though not sufficient for diagnosis alone.

I do not consider the examination by auscultation complete without auscultation of the pulmonary and aortic areas of the heart. A little accentuation of the second pulmonary sound together with a slightly higher pitched note than normal on percussion over one apex is a very suspicious combination, and I have seen definite signs of the disease developed when at the first examination this combination was all that could be detected as differing from the normal.

We see, then, that while no one method of physical examination is alone sufficient for positive diagnosis in the incipient stage, the auscultatory signs are of the greatest value. Though I have spoken throughout my paper of the apices, these signs are often first discernable in the interscapular area over the large bronchus when the scapular is drawn well out of the way.

Perhaps the only single means of diagnosis is the tuberculin test. Its adoption by the profession has been slow, but the testimony of all modern observers of this use of tuberculin is, without dissent, to the effect that, where properly used, it is a harmless procedure and positive diagnostic means. The cases in which harmful results have occurred, have been invariably, according to recent reports, in unfit subjects or from improper dosage. Fever, extensive disease or positive diagnosis by other means are improper dosage. Fever, extensive disease or from improper dosage. Fever, extensive disease or positive diagnosis by other means are contraindications which should be strictly observed. The preparation to be used is Koch's old tuberculin and the dose should be minute. Diagnostic reaction consists in local signs of hyperemia about the suspected area with a rise of temperature of from one-half to one degree or more in from four to thirty-six hours. The temperature should be taken at regular intervals for at least three days before the administration of tuberculin to ascertain beyond doubt its normality in order that the reactionary temperature be unquestioned and to avoid harmful results from the administration in a febrile condition. If reaction does not occur after the first dose, it must be repeated in three days and in larger quantity and if necessary a third trial given in still larger amount before a negative report be made as each dose will lessen the patient's susceptibility. In

illustration of the diagnostic value of tuberculin, I will mention the investigation in the Claybury asylum by Dr. French, of the frequency of tuberculosis in the insane. Fifty-five patients were injected with tuberculin. Forty-five of these developed the characteristic reaction. Thirty-four have since died and post-mortems made in twenty-nine instances showed active tuberculosis. Five of those who did not give the reaction subsequently died and careful autopsies failed to show in any of these the slightest signs of tubercular infection. Though a number of reports have been made of the presence of this reaction in other diseases, they have not been sufficiently verified by autopsies and other evidence to show that tubercular foci did not exist in these cases. The negative reaction is not of as great diagnostic value of course, as the positive reaction, but the test is widely used in determining positive cures and is reliable as far as any negative test can be and is accepted by many competent observers after a dose of five mgm. fails to produce reaction.

The demonstration of tubercle bacilli in the sputum is, of course, absolute demonstration of the disease when the possibility of local sources in the nose and mouth have been excluded. Although these may sometimes be detected before physical signs have developed in any degree, their appearance usually follows well marked signs and may even escape detection in fully developed cases. For diagnosis, full reliance cannot be placed in the negative results of bacteriologic examinations.

Much has been expected from the agglutination test with the patient's serum, similar to the Widal test for typhoid, but as a practical diagnostic means, this has so far proved uncertain and unsatisfactory.

In the hands of an expert the fluoroscope is a valuable diagnostic agent, but it is not until small areas, at least, of consolidation have developed that this is at all a certain means.

Beside a bad family history and suggestive malformations, the possibility of pulmonary tuberculosis must always be borne in mind and proper physical examination made in the presence of the following symptoms:

Hemoptysis.—This sign in the absence of other evident cause, must always be looked upon with grave suspicion. Where the diagnosis is made on this symptom, it is necessary to be certain that the blood comes from the lungs. After careful examination of the nose and throat and

the exclusion of these as sources of hemorrhage, the only doubt will be between hemoptysis and hematemesis. Other possible causes than tuberculosis of lung hemorrhage must, of course, be excluded.

Fever of from one-half to one degree, usually in the afternoon, if persistent and in the absence of other causes, is very significant especially if increased by slight exertion, or in women occurring regularly several days before menstruation. W. L. Dunn, in an article in a recent edition of *American Medicine*, lays stress on the temperature range as an early means of diagnosis. He has the temperature recorded every two hours from 8 A. M. to 10 P. M. and sums up the suspicious variations as follows: A slight midday or evening rise; subnormal morning temperature with normal or slightly elevated evening temperature; rise as a result of slight exertion, fatigue or mental excitement; variations due to change in external temperature conditions.

Progressive loss of flesh with debility, in the absence of malignant disease must suggest immediate examination of the lungs and other parts subject to tubercular infection. This sign, though common, may be entirely absent, for I have seen cases of advanced stages of the disease where no loss of flesh was noted and even where the weight had increased.

Rapid pulse, if continuous, where neurasthenia is excluded is also a suspicious sign especially if associated with ready sweating following slight fatigue or emotion.

progressed beyond the stage of non-septic inflammation. While during the last year some discussion has arisen among surgeons over the question whether or not to operate immediately, upon making a diagnosis, in all cases of appendicitis, and while to many the weight of the evidence seems to favor the Oschner plan of treatment, it is not within the province of this paper nor determination of this writer to bring this matter before the profession at this time.

Rather, I would call attention to a phase of the subject which reaches far into the etiologic and incipient stages of this grave disease, and to turn the eye of acute vision upon the processes of unseen disturbances which must seem to be harbingers of the pus and to inevitably, if allowed to proceed unarrested, carry the disease beyond the pale of internal medicine into the wonderfully useful, field of operative surgery.

Therefore it is not to the surgeon but to the internist or the family physician that this paper is addressed, for this class of medical men are the first to see appendicitis, in a large number of cases, in the initial stages and the premonitory states.

While it may appear a little inopportune to rewrite that already well written subject, etiology of appendicitis, the matter of the primary cause of appendicitis is so germane to the question under consideration that I consider its presentation essential and so will review the predisposing and active causes of appendicitis briefly.

In the very embryological history of appendicular structure may be found one of the predisposing causes. For in the evolving stages of animal anatomy this functionless vestige, by inherited uselessness for become a structure of low resisting power, having no vital organic function to perform, it seems to be a ready victim of the weakest assailant. The position and the anatomical mechanism of the appendix also render that dependent structure a point of frequent attack. For the appendix has only one orifice, opening into a blind canal, curved, and more or less narrowed by traction of its mesentary which is a part of the inferior layer of the mesentary of the colon. Traversing the free border of this fold of mesentary runs the single nutrient vessel of the appendix. Then, at the point of union of the large and small bowels, a pouch-like junction, lies the appendix, having a single narrowed orifice, possessing a tortuous canal, and supplied by a single blood vessel

A MEDICAL VIEW OF THE PREVENTION OF APPENDICITIS.*

By ALEX. G. BROWN, Jr., M. D., Richmond, Va.

Appendicitis, in the minds of a large and influential number of the medical profession, is a disease with which, as it progresses from the stage of catarrhal to septic inflammation, the surgeon alone is competent to deal. Undoubtedly, it must be granted, by all physicians that surgery is a necessary and essential factor in the treatment of all cases of appendicitis which have

*Read before the Medical Society of Virginia during its thirty-fourth annual session, at Roanoke, Va., September 15-17, 1903.

which courses its way along the free border of a suspensatory ligamentous band.

Keeping these facts in mind and, granting the fact, now generally acknowledged, that a trauma, foreign bodies, typhoid fever, actinomycosis, tuberculosis, and malignant disease are but rarely the exciting causes of appendicitis, let us see to what various writers attribute this frequently occurring disease. After making a research of the literature at his command, Eagleson states that:

Hartly says, "Indigestion appears to be a cause, in that the matter in the intestines taken in excess, poorly digested, and badly tolerated, provokes a catarrh and anomolous constriction of the intestines."

Mynter says: "Constipation, diarrhœa and digestive disturbances favor the development of appendicitis. These alone would not probably produce an appendicitis but added to them an abnormal position of the appendix, by which stagnation is favored, and the result will be sooner or later an attack of appendicitis."

Morris speaks of gastric disturbances only in connection with the acute attacks of the disease.

Deaver says: "Of the exciting causes of appendicitis, from a clinical point of view, disturbances of digestion are the most important. Such is the pre-eminence of these in the etiology of appendicitis and with such constancy have been observed that it is unhesitatingly asserted that appropriate inquiry will elicit a history of such disturbances in nearly every case. He goes on to state that the indigestion causes an increased virulence of the intestinal bacteria which in turn cause the inflammation of the appendix. Fowler maintains the same theory and says: "In rare instances in which the development of the disease is proceeded by digestive disturbances, the connection between the two occurrences may still be dependent upon bacterial agency."

Talmond says: "The erratic peristalsis produced by the presence of irritating material in the digestive tract determines the engagement of a stercoral calculus in the orifice of the appendix. This in turn gives rise to the symptoms constituting the first stage of the disease."

Anders says indiscretions in diet may precede a primary attack, and are of paramount etiology importance in the recurrent forms of the malady.

Johnson says: "Appendicitis is probably

often the final stage in intestinal indigestion which leads to catarrh of the caecum and consequent multiplication of bacteria with infection of the local peritoneum."

McNutt, in Loomis' System, states that indigestible and too highly seasoned foods, by provoking catarrhal conditions, by distending the bowels with fecal matter and gases, are also etiologic factors."

Osler refers to the frequency in which inflammation of the appendix follows the eating of indigestible articles of food.

Illoway maintains that this very grave affection is in a majority of instances provoked by constipation. This is brought about in three ways: First, by enabling fecal matter to pass into the appendix; second, by liquifying this and affording a culture ground for bacterial propagation, with the resultant inflammatory processes; third, by leading to the formation of concretions, which become exciting causes of appendicular colic, ulceration, gangrene, or septic inflammation.

Vaudenbosshe recites a case which appears to show that dysentery, with its lesion in the caecum, by propagation of infection, produces appendicitis. Patek says, very significantly, that many cases with the symptom-complex of gastro-intestinal irritation, begin with an indifferent aim, and, only secondarily, become appendicular.

Vevey thinks the greater frequency of appendicitis may arise, aside from the more strenuous habits of the day, to a neglect of the old-fashion habit of occasional purgation.

Robin sets forth the idea that appendicitis is a complication of gastro-intestinal derangement and he maintains that the first stage show itself as gastric hyperesthesia with hyperchlorhydria, secondarily, appearing in the form of acid fermentation, throughout the gastro-intestinal tract, to be followed, thirdly, by stagnation in the caecum of abnormal, acid matters, which induce catarrhal processes, which, in turn, afford a good culture ground for pyogenic infection.

From this array of witness may not the truth be established and the statement made, without fear of contradiction, that the causative factor of appendicitis is gastro-intestinal derangement. May not the fore-runner and antecedant stage of appendicitis be an acute gastritis, with the diminished hydrochloric acid, excess of mucus, lactic, fatty acid, and a puddle of ferment-

ing undigested food, or, may it not be a chronic gastritis, with deficient hydrochloric acid, undigested food stuffs undergoing fermentation and decomposition, generating lactic, acetic, butyric acids and alcohol—a vicious ally to intestinal distress and disease?

Then, may not there follow, duodenitis, and, proceeding along the continuous intestinal coating of the small bowels, involving jejunum and ileum, may not a catarrhal inflammatory state be produced, creating, instead of a diarrhoea, (which nature with kindness usually brings on for relief of this condition and prevention of the evil results of appendicular involvement) an accelerated peristalsis or per chance, a more to be feared condition, anti-peristalsis which occurs later from colitis, from the left transverse colon to ilio cæcal valve; and here, at this point of union of small and large bowel, the cæcum, the storm centre, may not there be engendered a gaseous accumulation, creating an ileo-cæcal colic, or an appendicular colic, whose great signal is pain?

This distinction of the caput coli with gases, fermentative matter, etc., fecal structure, all of which harbors and produces deadly germs of pus—produces congestion, tumefaction, catarrhal inflammation, septic inflammation, ulceration, or gangrene—which latter condition brings the appendix to that grave state where the surgeon alone can hopefully deal. Now, the conclusion is plain—if the premises of are true—that the prevention of appendicitis is possible, provided certain difficulties which render a present-day successful treatment of subject impracticable are overcome.

One great difficulty which would seem to embarrass the successful inauguration of a preventive treatment, is the fact that the general practitioner, by some inherent law which seems to afflict the generalizer of any subject, fails to exert an acute perceptive diagnostic insight into the chain of disturbances which invariably, in large majority of cases, prevails in the gastro-intestinal tract and to read the true significance of the future possibilities for appendicular disease in that patient the victim of alimentary disturbances or cæcal colic, or appendicular colic. Then, it would seem important to arouse the intellectual faculty to the realization of what it all means and to address remedial measures for the correction of disturbances therein. In this time, when gastro-intestinal disease appears to have reached the most excellent state

of being almost an exact science, may it not be hoped that much can be done toward the annihilation of the causal factor of appendicitis to the surgical degree.

Another difficulty confronting this matter of prevention of appendicitis is that the patient upon whom our work is to be done is human and subject to the frailties of human nature and flesh—and he must eat and move and have his being—and, even were the threatened appendicular involvement prevented, may he not have a recurrence and this time prove so rapid as to be beyond all hope of prevention. To this grave phase of the matter, it might be urged that, if every internist or general practitioner were to constitute him, as it were, a specialist on gastro-intestinal diseases, and, through the magnified vision of the specialist, who sees so clearly the dangers of the abuse of the organs over which he has become the expert healer and guardian, and who can so emphatically and impressively state to the patient the grave and serious perils that threatens him and the proper treatment and habits to follow to prevent becoming the victim of these perils, then might we not hope to see the time when appendicitis would have a most formidable enemy in the intelligent co-operation of the patient over whom it has stood a pall of terror.

It is late in the diseased state when surgery is necessary—much has gone on before, to which the eyes of the doctor have been shut and realities to him unknown.

Every patient with gastric and intestinal complaints, acute or chronic, is a candidate for appendicitis, and that cæcum should be kept under constant surveillance. The patient should know the perils and dangers of a condition of this kind, and the physician should urge that the patient be treated until cured of that gastro-intestinal complaint—or else lay the responsibility of a future attack of appendicitis at the door of the unmindly and heedless patient.

My belief in the statements herein set forth has been made very great by a number of cases which have forced upon me these conclusions. In a very humble spirit I present this paper with the hope that the idea is not far from truth.

SALINE INFUSION—METHODS OF USE— THERAPEUTIC VALUES—CASES.*

By H. C. BECKETT, M. D., Scottsburg, Va.

This is the age of revelation. The veil which since the creation has separated the outer from the inner court of Nature's great tabernacle, is being drawn aside, and the mysteries of the Holy of Holies are being revealed. Seemingly impenetrable darkness has been pierced by the X-ray, and now the marvellous light of radium is peering still farther into the unknown. The world is learning that the Kingdom of Heaven is within *us*, and not in some distant realm. Substances which have been considered most simple and common, are found to possess properties of inestimable value. The medical fraternity is following close upon the heels of the scientist and the psychologist; and, beside making discoveries of its own, is reflecting all newly discovered light upon its own profession for the purpose of alleviating human suffering, and bringing humanity into harmony with the laws of its creation.

The newly discovered properties of "chloride of sodium" are proving to be among the most valuable and efficient agencies of our therapeutical remedies. It has been successfully used in the treatment of numerous diseases, such as habitual constipation, the alleviation of pain by the use of local applications, in rheumatism, neuralgia, etc., but we wish to consider at this time its newly discovered therapeutical value in the treatment of conditions to which it has previously not been applied.

Judging from the increased number of articles we see in our medical journals upon the subject, the use of "saline infusion" is growing in favor with the profession. The three principal ways in which it is administered are:—the rectum, hypodermically, and directly into one of the larger veins.

The rectum absorbs the solution promptly, and in cases in which the symptoms are not grave, this is the proper route to select. From one to two quarts can be given every two hours until the necessary degree of intervacular tension has been reached.

In graver cases the solution is administered sub-cutaneously, infusing from a pint to a quart at a time, and repeating the procedure

every hour or two until a sufficient quantity has been used.

In *very grave* cases, the intravenous route will yield the quickest and most reliable results. Ordinarily the median basilic vein is selected to receive the solution. It has been demonstrated that a high temperature, not lower than 120° F. is necessary to its highest efficiency, and according to Erkelenz the best results have been obtained not from the true isotonic 9 per cent. salt solution, but with the 6 per cent. solution. Szuman recommends the addition of carbonate of soda, his "saline solution" being composed of

Sodium chloride	6 parts.
Sodium carbonate	1 part.
Distilled water	1000 parts.

The saline solution is at present most extensively used in diseased conditions associated with either hemorrhage or intense toxæmia. It replaces the fluid lost to the tissues in hemorrhage, and refills the blood vessels, thereby giving the heart something on which to work. It stimulates the cardiac ganglia; sustaining the nutrition of the heart itself, rendering it possible for the remaining blood to be propelled to the vital centers, holding the life forces until new blood can be formed. It relieves collapse, and raises the blood to normal temperature, but its greatest therapeutical power is manifested in lowering the specific gravity of the urine, in exciting diuresis and diaphoresis in all toxic conditions. It also dilutes the poisons circulating in the blood, and by the process of cell-lavage, removes the poison from the paralyzed cell, thereby bringing about a normal function.

Permit me to detail a few cases in illustration of the value of saline infusion:

Case I.—I was called in haste to the bedside of Mrs. W. H. G. about eight miles distant; age 38, multipara, in the seventh month of pregnancy, with general anasarca from extreme uremia. The fourth convulsion had just passed when I arrived. I administered one-half grain morphine with the usual amount of atropine, hypodermically and further controlled the convulsions by the rectal administration of hydrate of chloral. I then proceeded to bring on labor as quickly as possible, using hot saline injections against the os uteri which I think assisted greatly in the dilatation. After delivery the patient had "sinking spells;" the face and hands were cyanotic, the arms and legs were cold, and

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other symptoms of approaching death were apparent. At this time I used the saline solution by enteroclysis, about a quart at a time every two hours. The effect was wonderful. The pulse could soon be detected at the wrist, cyanosis disappeared, respiration became regular, consciousness returned. The kidneys responded nicely to the action of the saline infusion, and a surprising quantity of dark colored—almost black urine was passed in the following 24 hours. I am quite confident that I owed the full recovery of this patient to the saline treatment.

Case II.—Dr. F. C. in the *British Medical Journal* of this year, cites a case of a 4 year old boy who had swallowed four ounces of undiluted whiskey. Unconsciousness, shallow respiration, with a weak and rapid pulse supervened in 45 minutes—the general condition being one of profound collapse. As no vomiting had occurred, the stomach was washed out and the usual stimulation resorted to—without effect. Hot saline enemata were then introduced. The child recovered consciousness within an hour and was apparently well the next day.

Mercks Archives.—April, 1903, reports that a number cases of bubonic plague were treated with chloride of sodium, the effect of which was to rapidly lower the temperature—the normal being often reached within 24 hours, and becoming sub-normal, three or four days later, then normal again, under the continued use of this treatment. The buboes diminished in size and sometimes disappeared. By means of the saline treatment the rate of mortality was reduced 15 per cent.

In July last, two cases of severe sunstroke, in which the regular remedies were entirely ineffectual, were given the saline treatment. The temperature of the two respectively was 108° and 109° F., which ice caps and baths had failed to reduce, and both patients were delirious. At the rate the temperature was maintaining itself, it was a question of only a few hours when they would either become insane, or die from exhaustion. It was in this emergency, and with so much at stake, that the saline solution was introduced, as a heroic and novel measure.

The result was magical. Within an hour one patient regained consciousness, his temperature falling 4°. In the other case, soon after the infusion, convulsions ceased, and he fell into a deep sleep, with rapidly lowering temperature.

The credit for the first use of the salt solution

hypodermically for the cure of pneumonia, doubtless belongs to Dr. F. C. Henry, of Philadelphia. Dr. Maurice Kahn records a case of this disease in his practice, where the ordinary methods failed to produce any favorable change in the condition of the patient, who had a pulse of 160, temperature 105° F., Cheynes-Stokes respiration, pronounced cyanosis, cold arms, legs and forehead, and was apparently moribund. Hypodermoclysis was ventured, four injections aggregating about three pints, being given within six hours. The immediate effect was astonishing. The pulse became slower, and of better quality, the temperature dropped, cyanosis disappeared, respiration became regular, consciousness returned, a general mild perspiration superseded the dry skin, and diuresis was marked. For two days rectal injections of salt solution were given at intervals. The subsequent history of the case is of great interest. On the 9th day of the disease, as there had been no voice sounds nor rales for three days, with absolute dullness of the involved area acupuncture was performed. Result—dry-tap. From this time recovery was slow, but on the whole satisfactory.

I have used saline solution in my practice in different ways, in varied diseases, and under varying conditions, with only gratifying results. I would recommend its use for the restoration of blood after hemorrhage from any cause, for shock with or without loss of blood, for collapse in the course of any disease, especially cholera and typhoid fever, or collapse following a surgical operation. In puerperal infections it increases the power of the tissue and blood to resist the action of microbes, destroys them and assists nature in throwing off their effects.

Its use has also proved beneficial in cases of epilepsy, and of narcotic poisoning.

We have already learned that so simple a substance as our common salt has more in it than has been dreamed of, and its field of usefulness will no doubt be still farther widened and extended.

New Orleans Polyclinic.—Seventeenth annual session opens November 2, 1903, and closes May 28, 1904. Physicians will find the Polyclinic an excellent means for posting themselves upon modern progress in all branches of medicine and surgery. The specialties are fully taught, including laboratory work. For further information, address, New Orleans Polyclinic, Post-office Box 797, New Orleans, La.

REPORT OF CASES SHOWING THE EFFICACY OF ELECTRICITY AND HOT AIR.*

By S. G. SLAUGHTER, M. D., Lynchburg, Va.,

Member American Roentgen-Ray Society; of American Electro-Therapeutic Association, etc.

In presenting *this* paper upon physical methods I shall not go into theory and technique, but dwell principally upon the *results* of treatment.

A few years ago electro-therapeutic instruments and hot air apparatuses were crude, there were few teachers, fewer books, no schools, no journals on these subjects and because of the wonderful demonstrative power of these agents, they furnished a good opportunity for charlatans; it was their chief field of action and, therefore, the proper measures were thrown into disrepute. But to-day our instruments are good, though unduly costly, and some are cumbersome; but they are instruments of precision and instructive in their use, and they now form a part of the regular teaching in our best medical colleges.

Electro-therapeutic developments have in late years been so rapid that, in order to keep pace with them, a man must devote much time to studying the scientific principles of the ever increasing appliances and, if he hopes for good clinical results, he must be prepared to diagnose accurately the conditions which may be benefitted by electro-therapy and prescribe as exact a dose of this as of iron, arsenic or other therapeutic agents.

Electro-therapeutic methods are far from being cure-alls, but the grave prognosis of a number of diseases is modified by resort to them, as for instance, pulmonary tuberculosis.

The following case of *Pulmonary Tuberculosis* came under my care last June:

Case I.—Mr. D., aged 24, gave a history of cough and nightsweats for several months, complete loss of appetite, general debility and a loss in weight of 38 pounds in six weeks. His family history was good with the exception of the death of his twin brother from consumption the previous December. He had always slept with his brother.

Physical examination discovered signs of consolidation in the centre of the superior lobe of the left lung, and this was verified by an X-ray examination. His temperature was 102.5° F.:

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pulse 92, and respirations 23 to the minute. Microscopic examination revealed the presence of abundant characteristic bacilli.

Mr. D., although urged to go to Colorado, refused on the ground that his brother had failed to derive benefit from climatic treatment. He was unable to take any emulsion of cod liver oil or creasote, on account of the weakened condition of his stomach; so the case presented an excellent opportunity to test the efficacy of physical methods.

I gave him high-tension electricity 10 to 15 minutes daily, followed by an X-ray exposure. One day I would place the patient so that the ray fell on his chest anteriorly and the next day posteriorly, in order to avoid producing a dermatitis.

Each morning and evening he inhaled for 10 minutes a vapor of creasote, oil of pine and oil of cedar through atmosphere impregnated with ozone; and twice a week he took a dry, hot air bath for twenty minutes at a temperature of 300° F. After he had been under treatment one week the night sweats and expectoration ceased, the cough lessened rapidly, and in several weeks he gained 17 pounds, and physical examination after two months treatment was negative. He has gone to live in an unfavorable climate, but happily continues to improve.

Case 2.—Mrs. R., aged 24, treated in May, 1902, had a typical case of *Rheumatoid Arthritis*; the first symptoms appeared five years before, shortly after the birth of her only child. At the end of three years she was entirely helpless.

When I saw her first, her shoulders, wrists, knees and ankles were stiff and markedly deformed. She could not raise her hands from her lap, nor get up, nor walk unaided. Her digestion was wretched, and an opiate was necessary to control her pain and allow her to sleep.

Owing to the well known fact that the disease is largely due to impaired nutrition and trophic changes in the nerve centres and trunks, as well as in the muscles and articulations, I prescribed a diet rich in proteids in addition to the electricity and hot air: but I discontinued all medicine. There was an immediate improvement and after sixty days she was able to walk not only around the house, but up and down stairs unaided. She was also able to lift her arms to arrange her hair and feed herself. Her improvement was so great that I could not impress upon her the importance of continuing treat-

ment, and her going home prevented my completing the case according to my own satisfaction.

Case 3.—Mr. J. J. R., aged 65, was brought to me on December 28, 1902, with a chronic ulcer on the left side of his face and neck, which presented the microscopic appearance of *carcinoma*. The sore covered an area of six by eight inches. Its superior border was bounded by a curved line drawn from the external angular process of the frontal bone to the posterior inferior angle of the parietal bone following in the centre the attachment of the temporal muscle. The inferior border of the lesion was bounded by a line drawn from a point one and a half inches below the body of the inferior maxillary to a point on the anterior border of the trapezius muscle four inches below its occipital attachment. The diseased tissue extended as far anteriorly as a line drawn connecting these two and passing through the outer angle of the left eye and the angle of the mouth. The deep muscles of the face and neck were exposed, the cartilaginous and muscular portions of the ear were entirely destroyed, and destruction of the tissue was so advanced that the styloid process of the temporal bone, the ramus of the jaw, the mastoid process, the external carotid, the external and internal jugular veins were all plainly visible. The parotid gland was partially destroyed and the saliva constantly dribbled from the Stenson's duct over the outer surface of the remains of the masseter muscle. The muscles of the throat were so much involved that deglutition was very painful, and the difficulty in persuading the patient to take nourishment proved eventually an insurmountable difficulty. The edges were indurated and abrupt, the odor was very offensive.

The patient gave a history of a small persistent sore on his neck, which two years before had been suddenly aggravated by a blow from the handle of a rake and had spread rapidly during the past year. He had spent five weeks at one time and nine and a half months at another in cancer hospitals and had grown steadily worse.

He was too weak to come to my office and, therefore, I could not treat him with the X-ray. So I used the more movable apparatus connected with the Blue ray, and was very much gratified to find that the pain rapidly lessened and that the odor became noticeably less after each treatment; in ten days it was only appre-

ciable when one was very near the patient, and entirely disappeared in three weeks. The edges softened and there was a restoration of tissue around the edges.

An uncomfortable burning sensation rendered treatment impossible during the fifth week, and one day, when the dressing was being changed, the necrosed mastoid process dropped off leaving a healthy stump. I used the blue violet ray five times a week for 15 to 20 minutes. Under this treatment alone the diseased area gradually filled in from the bottom until by the end of the sixth week the bony structures and great blood vessels were no longer visible and the entire open area was covered by healthy granulations when the patient on account of his increasing inanition was taken home.

A letter from his wife written six weeks afterwards said, "The sore continues to heal and fill. All who have helped me dress it are surprised to see how it improves each day." The patient, however, died about two weeks later than this from lack of nourishment.

I have had an interesting series of *thirty cases supposed to be* suffering from *malignant growths*, but which I do not report cancers because they lack the confirming microscopical examination.

Twenty-five of these were cutaneous lesions which had persisted for a period of years and had been treated by usual or unusual methods. The patients came because in each case they were growing worse. Three are still under my care and are improving; the others have been dismissed clinically cured, and remain a sufficiently long standing to warrant an expectation that there will be no return of the lesion.

Two cases showed no improvement after twenty-five exposures, and so were advised to discontinue treatment. Of these one presented the clinical features of osteo-sarcoma—the inferior maxillary being involved. The other was an epithelioma of the lip on which caustics had been recently and so vigorously used that the lip had been perforated and the gum ulcerated.

A case which gave gratifying results in yielding to the X-ray was that of a patient who gave a history of having noticed five years ago a scaly sore on his cheek which gradually grew worse in spite of many healing applications. In the spring of 1901 he went to New York to be treated by an eminent surgeon who used the knife and curette liberally, and assured the patient that he was cured; but in five months the

cicatrix began to break down and by the spring of 1902 it was again a mass of diseased tissue. He was then treated with the X-ray, and after sixteen exposures the sore completely healed and has remained so. Eighteen months having now passed, the result is encouraging.

An interesting case of *relieved pelvic congestion* is shown in the case of Mrs. S., aged 30, treated twelve months ago. She has suffered from hemorrhoids and metrorrhagia for years. She was treated by the high tension Faradic current daily for one month. Since then her courses have been regular and normal, and the hemorrhoids have not troubled her since treatment.

A case which shows that the continued use of electricity will cause the *absorption of adhesions* was that of Mrs. T., aged 28. She had been under treatment for several years in Virginia and had been twice to Johns Hopkins. She had been subject to several minor operations without relief. She suffered from diffuse abdominal pain and marked functional disorders. On making a local examination I found many pelvic adhesions.

I gave her high tension electricity locally, daily, for one month, and for several days in the beginning of the treatment, gave her positive static electricity to control the associated symptoms of nervousness and insomnia. At first it was necessary for her to come in a carriage to my office. After a few days, however, she was able to come on the street car, and at the end of three weeks she walked eighteen blocks without discomfort. Treatment was practically only begun when she went home, and in two months returned to have the uterus and appendages removed. As on the second examination, after three weeks treatment, I found the adhesions had become softer and more elastic. Doubtless had she continued treatment by electricity, she would have been cured without sacrificing the organs of generation.

My next case illustrates quite satisfactorily the *tonic effect of electrical treatments*—Mr. B., aged 34 years, came to me in June, 1902. During the foregoing three years he had had three attacks of rheumatism and one of typhoid fever. His last attack of rheumatism had occurred in January, 1902. He was confined to bed for three months, and then slowly convalesced for three months more. His convalescence, however, was so slow that in spite of fresh air and tonics, the patient seemed to grow progres-

sively weaker, instead of better, and was reduced in weight to 125 pounds. He was advised by the attending physician to give up all idea of ever resuming business. He suffered from precordial pain, palpitation, indigestion and insomnia; his voice was feeble, and he was exhausted by making the slightest effort. On making a physical examination I found his heart slightly hypertrophied; his pulse weak and compressible.

I advised him to discontinue medical treatment and gave him positive static electricity for twenty minutes daily. In one week he slept well, the precordial pain, palpitation and indigestion became less troublesome. In one month he resumed work and in two months had gained 25 pounds. To-day he is well and weighing 175 pounds.

In these cases, for varying reasons, the advantages of internal medication were not possible. When it can be done, however, it is advantageous to employ, at the same time with the electrical treatment, such medication as may be indicated in each given case.

716-718 Church Street.

CONGENITAL ABSENCE OF THE APPENDIX.*

By JOHN W. DILLARD, M. D., Lynchburg, Va.

Pardon me for a few minutes, while I call your attention to a very unique case, which seems to show that the veriform appendix is not always constant.

In June last I operated on a lady, age thirty years, for a diseased condition of the tubes and ovaries. The adnexa having been removed, and the patient in a good condition, I remarked to Drs. Slaughter and Thomasson, who kindly assisted me, that before closing the wound, I would examine the appendix, although there had been no symptoms referable to a disease of that structure.

The abdominal incision was three and a half inches in length, and a thorough search was easily made, but the appendix was absent. The cecum coli was found to be rounded and globular in shape, the longitudinal muscular band

* Read before the Medical Society of Virginia during its thirty-fourth annual session, at Roanoke, Va., September 15-17, 1903.

was vertical and continued to the lower end of the pouch. There were no evidences, external or internal, of an operative removal of a pathological process.

This, therefore, is another instance of complete congenital absence of the appendix, not of a so-called retroperitoneal or hidden appendix.

After an extensive research, I have found only a very few like cases on record.

Dr. J. D. Bryant, of New York, reports a case in which he operated for appendicitis, but found "absolutely no appendix." The point of tenderness was found to be a glandular growth located posterior to the usual site of the appendix.

The case here reported made a good recovery, and I may add that she explains her missing appendix by saying that she had reached the top round in the ladder of evolution.

VALUE OF AUSCULTATION IN THE DIAGNOSIS OF THE FETAL POSITION.

By W. A. PLECKER, M. D., Hampton, Va.

In looking back over our obstetrical work how many are there of us who would not be compelled to plead guilty to the charge of failure to make an early, full and correct diagnosis of the presentation and position in a large percentage of the cases of labor attended? If we desire to do the best possible obstetrical work, accuracy in diagnosis is of first importance. Every physician in active practice has it in his power, by careful attention to details, to become reasonably proficient in this respect.

The object of this paper is to call attention to auscultation of the fetal heart-sounds as a valuable means of diagnosis not generally made use of in routine obstetrical examinations.

The method which I have found of great value is to make a careful examination by auscultation and palpation during the last month of pregnancy, when possible, and at the time of labor, writing out my observations for future comparison. In this way the habit of careful, systematic investigation may be formed, and you may be prevented from deceiving yourself

as to what your first observations really were when later results clear up all doubt.

We all know the difficulty or impossibility of making a positive diagnosis by digital examination with the presenting part high up without an anæsthetic and the introduction of the entire hand. How often have our vigorous efforts in this respect brought forth protests from the patient in the expression, "Oh, doctor, that hurts!"

The deep pressure necessary in diagnosing the position of the lower pole by external palpation is also productive of more or less pain. The administration of anæsthetic and introduction of the entire hand is hardly justifiable in the ordinary run of cases.

Several years ago I began the routine custom of auscultating the fetal heart during, as well as before, labor, whenever I had the opportunity of making an examination in advance. The purpose at first was largely to study the question as to the diagnosis of sex by the pulse rate. In this way I began to be impressed with the well known fact that in the occipito-left-anterior position the heart sound is most distinct to the left of and below the umbilicus, and also that in unusual positions the sound is usually heard elsewhere. A number of observations in unusual cases has led me to look upon this as almost of equal value with palpation before and during the first stage of labor, particularly with primiparæ. It also furnishes during labor the most valuable means we have for studying the condition of the child with reference to delay in the use of operative measures.

Either the stethoscope or phonendoscope may be used, though some examiners find the unaided ear satisfactory. By going over the entire abdomen systematically and carefully but few cases will be found in which the heart sounds cannot be heard with ease.

Before the fifth month the sound can rarely be heard, but as pregnancy advances it becomes more and more distinct. The sound usually covers an area of about three inches in diameter.

If heard two or three inches below and the same distance to either side of the navel, the position is most likely an occipito-anterior, corresponding to the side on which it may be heard.

In occipito-posterior presentations the sound is usually far back, and in my experience is heard over a larger extent of surface. The

*Read before the Medical Society of Virginia during its thirty-fourth annual session, held at Roanoke, Va. September 15-17, 1903.

position of the heart sound is about midway between the extremities of the fetal ovoid: consequently in multiparæ, where either pole rides above the true pelvis, this sign is of little value in determining between vertex and breech presentations. In primiparæ the presenting part in vertex cases sinks low into the excavation and rides above it in breech presentation. Therefore in the former the sound will be below the umbilicus, and above it in the latter.

It is in our primiparæ cases that we feel most anxious, and find the difficulty of diagnosis by touch and palpation the greatest. We are specially fortunate, therefore, in these cases in having in auscultation a means of diagnosis easy of application, free from pain, and from the danger of septic infection, and, in the main, accurate in results.

While in multiparæ the results of auscultation are not so accurate, especially in occipito-anterior and breech cases, yet the sounds are heard far back in occipito-posterior presentations with sufficient uniformity to lead us to the employment of all other means in making an early diagnosis when this condition is present.

In transverse presentations the heart is heard on the side of the body toward which the head points.

The average fetal pulse rate is 135 to 140, but I have observed it as low as 120 and as high as 160. In male and in large children the rate is usually low, though but little reliance can be placed upon this point in foretelling the sex.

As fetal exhaustion progresses the pulse becomes more rapid and feeble, and we then have a guide as to the need for interference. Auscultation of the fetal heart furnishes our most important sign in detecting the existence of multiple pregnancy.

Case 1. Mrs. K., 6—multipara; length of pregnancy, 300 days; slight labor pains for 3 days; had pains for 9 hours, when the head became wedged in the pelvis in O. D. P. position, and a 9 pound female child was delivered with forceps. In this case the fetal pulse was heard most distinctly $3\frac{1}{2}$ inches to the right of the navel, and from thence over an area of 3 inches in each direction. Palpation showed the cephalic prominence on the left side. This illustrates the points that in multiparæ the beat is heard higher up than in primiparæ, and that in occipito-posterior positions it is heard further back than in occipito-anterior.

Case 2. Mrs. G. H.—primipara; length of

pregnancy, 276 days. Examination several weeks before labor showed fetal pulse 146 to minute, and extending far back on the right side. Palpation showed cephalic prominence on left side. Knowing that the occiput was pointing to the right, and considering the infrequency of O. D. A. position, together with backward location of the heart sound, I felt justified in diagnosing an occipito-dextro-posterior position. The treatment consisted in having her assume knee-chest position several times daily until tired, afterward lying on the right side. The hope was evidently realized, that as the head receded from the pelvis the child would rotate on its axis, owing to the greater weight of the spinal column.

At the time of labor the heart sound could be heard from the navel to a point near the spine of the ilium on the right side. By touch, the position was found to be right occipito-anterior. The birth of a female child was accomplished in 12 hours.

This case illustrates the result of postural treatment in correcting a posterior position prior to labor or to the rupture of the membrane; also the lower position of heart sounds in primiparæ.

Case 3. Mrs. L., 3—para. The length of this pregnancy, counting from the last menstrual period, was 330 days. An examination made on the 279th day, or 51 days before labor, showed a fetal pulse rate of 150, heard on the right side, extending from the navel to the back, most distinctly far back. Palpation showed the cephalic prominence on the left side. Being reasonably sure that the position was an abnormal one, special care was used in the beginning of labor, to make an accurate diagnosis. Labor progressed favorably, and after partial dilation of the os a brow occipito-left-anterior position was made out, the chin pointing back and to the right side. I immediately called in consultation Dr. J. T. Boutelle, who introduced his hand, under chloroform anæsthesia, and found the condition as described, except that by that time the head had become more extended and the brow had given place to a face presentation with chin pointing back. The treatment which I had mapped out before sending for him was to attempt to flex the head by manual means, thus changing to the favorable position of occipito-left-anterior. Failing in that, I thought the safest step would be to turn and deliver. Rupturing the membrane, we each

endeavored to change the position, but without success. The pelvis being roomy, the parts well dilated, and the amniotic fluid not drained away, I decided to act upon the suggestion of Dr. Boutelle and try the use of forceps instead of version. I must confess to a feeling of great anxiety as the head was drawn down into the pelvis, with the hope of a successful termination hinging on rotation during descent. Fortunately, as anticipated by Dr. Boutelle, the head rotated beautifully and spontaneously. We could observe the chin gradually turn until it came under the pubes, followed by the delivery of a nine-pound male child in good condition in the mento-right-anterior position. The perineum was uninjured.

Although the result of treatment was successful in this case, I am not sure that I would attempt forceps delivery again with posterior face position, when version could be so easily done.

Case 4. Mrs. M. S. H. This case of face presentation occurred nine days after the last. Primipara; length of pregnancy, 279 days. The patient was not examined until after the beginning of labor, when the membrane had ruptured and the os had dilated to the size of a half dollar. The fetal heart beat was then 140, and heard over a space extending from two inches to the left of the navel across the right side toward the back. Examination with the hand in the vagina showed a mento-left-anterior position. The first stage of labor was slow, but as the os was dilating and the case progressing it was left to nature until the fetal pulse rate had increased to 158, and showed evidence of weakness. The os then being fully dilated, forceps were applied, though rather high up, and the delivery of a seven-pound dead male child was effected with considerable effort, the chin emerging under the pubes on the left side in the usual manner. The death of the child, which was already weakened by 36 hours of labor, occurred during the efforts at delivery. The question arises as to whether the delivery of a living child might not have been accomplished by version, even though the amniotic fluid had drained away.

The perineum, which was torn to the sphincter, was repaired with good result. The os four and one-half months later showed only the usual tear found after the first labor.

The heart sound in face presentation is ordinarily described as being heard over a limited

portion of the front surface of the child to the left of the navel in mento-anterior position. In both the posterior and anterior face presentations reported the sound was heard over a large surface, extending across the right side to the back. This was probably due to the close adaptation of the child's body to anterior surface of the uterus.

Case 5. Mrs. M. S. M., 6—para; length of pregnancy, 294 days. Was first seen by me at 10 A. M. after being in labor 13 hours. Fetal pulse was 120, and heard three inches below and the same distance to each side of the navel. The os uteri was dilated to the size of a dollar. Digital examination showed a L. O. P. position. This case illustrates the variations that occur in the location of the heart sounds in multiparæ, though it confirms my experience that in posterior positions the heart sounds can be heard over a large area.

In this case the diagnosis being made early and the pelvis being roomy, rotation was readily produced with the right hand, strong, upward pressure being made beneath the occiput during four or five pains with the patient in the dorsal position. Rotation accomplished, several more pains completed the dilatation of the os and the birth of an eleven-pounds male child in the O. L. A. position.

Case 6. Mrs. H. C. E., 3—para. Her first labor was a face presentation; the second having a placenta prævia complication, with secondary hemorrhage after two weeks. Examination made one month before labor showed the fetal heart beat on the left side two inches to the left of the umbilicus and extending across the right side of the abdomen to the back. It could also be heard from two inches above to three inches below the navel. Rate, 140. At the time of labor the rate was 160, and the sound could be heard over the same surface. The abdomen was greatly distended with amniotic fluid, making palpation unsatisfactory. No presenting part could be made out by ordinary digital examination. The os dilated rapidly and completely when the membrane was ruptured. A great flow of fluid followed, bringing the cord down with it.

The diagnosis of transverse presentation was readily confirmed by palpation, the head being in the right side. Both feet were quickly brought down, and a living child delivered.

This case demonstrates the fact that in transverse presentation the heart is heard most dis-

tinctly on the side in which the head is found, and also that it may be heard over a large area.

SUMMARY.

1. The young physician is apt to find difficulty in diagnosing the position of the child during labor, and is consequently uncertain as to the management of delayed cases.

2. A reasonable degree of skill may be acquired by any one who will systematically make use of all the means of diagnosis in every case which comes to hand.

3. To this end it is well to form the habit of writing out his observations during the progress of the case, and, when possible, in advance, for the purpose of comparing these notes with later developments, and for record keeping.

4. We have in auscultation of the fetal heart a means almost, if not quite, as valuable as palpation, for determining the position prior to or in the beginning of labor.

5. This method is essential in determining the condition of the child, and in settling the question of delay in the employment of operative measures—growing weakness and increase of rate being indications for prompt action in the interest of the child.

6. This sign is of special value in primiparæ, where both the need for accuracy in diagnosis and the difficulties encountered are greatest.

7. In the primipara the head sinks deep in the pelvis, and the location of the sounds is more uniform. In these cases, in *occipito-anterior positions*, the heart beat is usually most distinct below the umbilicus and to the side corresponding with that to which the occiput points. In *occipito-posterior positions* the beat is heard further around toward the back. In *face* presentations the sound is similarly heard on the side toward which the chin points, but may extend over a large area and far back. In *breech* cases the child does not sink so low and the sound is apt to be above the navel. When *transverse*, the sound is heard most distinctly on the side in which the head is found, and may cover a large surface.

8. In *multiparæ*, the child rides above the excavation with either pole presenting, and the heart sound is apt to be heard higher in head presentations than with the primipara. In breech presentations the location is the same. In other positions the locations of the sound are similar to but less uniform than those in primiparæ.

9. An examination by this means, together with palpation, during the last month of pregnancy, may detect an occipito-posterior position, which may be corrected by having the patient assume the knee-chest position several times daily, afterwards reclining for a while on the side toward which the occiput points.

SOME REMARKS ON THE IMPORTANCE OF OTORRHEA.

By CLIFTON M. MILLER, M. D., Richmond, Va.,

Demonstrator of Anatomy and Instructor in Diseases of the Eye and Ear, Medical College of Virginia.

The condition commonly called "running ears" has come to be looked upon by the general public as something to which all children between the ages of one and ten years are liable, just as they are expected to have measles, whooping-cough and chicken-pox. Such expressions as "they will outgrow it," or "getting rid of all that matter from the head is good for them," indicate the common view taken of the disease, which, in reality, is far more serious than any of the exanthemata, and its complications and sequelæ more often result in death or permanent disability.

When we stop for a moment and consider the fact that an abscess in no other part of the body is allowed to discharge without active efforts being made towards its cure, how foolish does it seem to view lightly an abscess in the temporal bone, where the purulent cavity is separated from vital structures only by the thinnest layer of bone, which layer is most frequently physiologically perforated or else the suppuration causes a necrosis, leaving a pathological opening. The patient who has a suppurative disease of the middle ear is carrying, at all times, in his head, a mine, which may, at any time, explode, and the result of this explosion may be death or grave surgical procedure, which will have to be undertaken for the saving of life. I am well aware that to this statement you can make reply that the published statistics covering thousands of autopsies on some of the largest foreign hospitals show that death resulted from the condi-

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tion under consideration in only one-half or two-thirds of one per cent.; but how often the existence of a chronic purulent discharge was a contributing factor to the cause of death we have no means of knowing, though we are all well aware of the fact that an unchecked suppuration so depresses the system as to make it fall an easy prey to other diseases.

When we recall the practice of life insurance companies, which reject all applicants suffering from otorrhœa, we are again impressed with the menace to life of this condition, for in no business is competition more keen than in that of life insurance, and recent years have evidenced a strong tendency among them to insure many who were in the past considered uninsurable; but I am not aware of a single company which does not make chronic purulent disease of the middle ear an absolute bar to obtaining life insurance. The small percentage of deaths as shown by statistics to be due to suppuration in the tympanic cavity might cause us to view this somewhat carelessly, though a large portion of this number comes under the head of preventable deaths, and it is our duty as physicians to save them; but when we take the trouble to recall the fact that deafness is an unending source of unhappiness and only too frequently removes all hope of success in life, we should be unceasing in our efforts to do all in our power to make of these sufferers as useful members of society as possible, and neglect to do this is inexcusable.

Chronic purulent otitis media results most often from a neglected acute purulent otitis media; but there seems to be something which causes the acute condition arising as a complication of scarlet fever, measles and diphtheria, as well as influenza, to tend to become chronic.

The presence of adenoid tissue in the pharynx is a contributing cause, and one which causes our efforts towards a cure to meet with but little success till these growths have been thoroughly removed.

When the pus is draining well the only symptom noted by the patient will be a constant aural discharge and disturbance of hearing, but should there be any obstruction to the free exit of the pus, there will arise pain in the ear and mastoid tenderness; or at any time, as the result of obstruction or a blow or from unknown cause, there may arise an acute exacerbation with mastoiditis in an ear previously healthy. The discharge may be purulent, muco-purulent or merely mucous, and scanty or profuse, odorless, or having

a peculiar penetrating fetid odor, and ranging in color from almost white to blue or bluish green. But, contrary to opinions formerly held, a fetid odor does not necessarily indicate necrosis of bone; our diagnosis of this must be based on careful examination with the probe. The ear may discharge constantly or have occasional periods free from discharge, and we sometimes hear patients state that they hear better when the ear is discharging, which is due to the fact that the fluid acts as a conductor of the sound waves, but this does not contraindicate curing these patients, for the proper treatment of the tympanic cavity after relief of the discharge should restore it to its highest efficiency.

I will not trespass on your time to give the details of the findings upon examination with the aural speculum. Let it be sufficient to say that the perforation in the tympanic membrane is usually single, but may be multiple, and varies in size from the destruction of the entire membrane to the most minute pin-hole opening.

In the complications we find most of the sources of discomfort and the conditions which menace life. Eczema of the external auditory canal and auricle is frequent as a result of the continued presence of an irritating discharge, and may result in narrowing of the external auditory canal or sloughing of the auricle. The destruction of the cuticle at this point offers a favorable point of infection by erysipelas with its many serious consequences.

Recalling the numerous paths by which the infection may travel from the tympanic cavity to the surrounding structures and general system, we are surprised, not at the frequency of complications supervening, but that we do not more often meet with them. The veins which pass from the temporal bone to the sigmoid sinus and carotid plexus, by way of the lymphatics, or along the processes of the dura mater, which dip into dehiscences in the bone, besides continuity and contiguity of tissue, are all fertile roads for the transmission of pathogenic germs.

Mastoiditis from the entrance of the pus into the antrum is probably the most frequent serious complication, but pachymeningitis—both general and local—are frequently found, as well as epidural abscess, while the pia mater and arachnoid may be involved, causing a leptomeningitis.

Brain abscess is one of the gravest complications to be met with, and the number of brain abscesses due to middle ear suppuration has by various observers been estimated at from 30 to

82 per cent. of the entire number. We may find thrombosis of one of the sinuses at the base of the brain; of the jugular vein, or rarely of the the carotid artery. Necrosis of the temporal bone may cause ulceration of the carotid artery and fatal hemorrhage result. Disintegration of a septic thrombus will allow the morbid material to be carried into the general circulation, bringing about a septic pneumonia or pleurisy or metastatic abscess in some part of the body, as liver, spleen or one of the joints. Pus draining into the pharynx is swallowed and a condition of gastro-enteritis may follow or a general septicæmia may be caused by absorption. Necrosis of the temporal bone may bring about facial paralysis, or the sense of taste may be interfered with by involvement of the corda tympani. The internal ear may be involved by necrosis of the internal wall of the tympanum or through the round window after the involvement of the protecting membrane or the oval window through the foot-plate of the stapes being necrosed.

I will not go into lengthy details of treatment. Any cachectic condition should be actively combatted. Children who have inherited syphilis or a tendency to tuberculosis are peculiarly obstinate in their response to treatment of chronic middle ear suppuration. The nose and throat should be put into a condition as nearly approaching the normal as possible. In local treatment of the ear cleanliness and free drainage are the points to be kept in mind. If the opening in the membrana tympani is not sufficient to admit of a free exit of the pus, it should be enlarged. Polypi, granulations and necrosed bone should be removed. For irrigation of the ear one of the antiseptic solutions should be used, and in my hands formalin (one dram to one pint of water) has proved one of the most efficacious. With the so-called dry treatment, I have had but little experience, and favor it only where the patient can see the physician daily or twice daily, or else is in charge of an efficient trained nurse. Should persistence in the use of antiseptic irrigations after the removal of polypi and granulations not bring about a cure, the gravity of the condition should be fully explained to the patient and operative intervention advised, either removal of the ossicles and curettage of the tympanum or the radical operation advocated by Stacke, but we should not forget that while the latter procedure will re-

lieve the suppuration, it holds out but little hope of improvement in the hearing.

BIBLIOGRAPHY.

- Lederman, M. D., *The Laryngoscope*, November, 1902.
 Stein, O. J., *The Laryngoscope*, December, 1902.
 Gruening, E., *The Laryngoscope*, December, 1903.
 Levi, Robert, *The Laryngoscope*, May, 1903.
 Symposium—Otitis Media Suppurativa—Norval H. Pierce, S. McCuen Smith, Charles W. Richardson, James T. McKernon, Edward B. Dench, *The Laryngoscope*, June, 1903.
 Jansen, Privat-Dozent, Berlin, *Annals of Otolaryngology and Rhinology*, XI., 3.
 Church, B. T., *Annals of Otolaryngology and Rhinology*, XI., 3.
 Grant, Dundas, *Annals of Otolaryngology and Rhinology*, XI., 4.
 Elsworth, R. C., *Annals of Otolaryngology and Rhinology*, XI., 4.
 Harris, T. J., *Annals of Otolaryngology and Rhinology*, XII., 1.
 Symposium—Suppuration of Middle Ear—E. B. Dench, J. B. Clemens, M. D. Lederman, Robert Lewis, Jr., W. C. Phillips, J. F. McKernon, *Medical News*, January 17, 1903.
 White, J. A., *Virginia Medical Semi-Monthly*, September 10, 1897.
 Knapp, H., *Archives of Otolaryngology*, XXIII., 3. Reprint.
 Alderton, H. A., in Posey & Wright's *Diseases of Eye, Ear Nose and Throat*.
 Dench, E. B., *Diseases of Ear*.
 Politzer, A., *Diseases of Ear*.

7 N. Third St.

Correspondence.

Some Interesting Facts About the London Hospital.

LONDON, ENG., Nov. 26, 1903.

As our medical journals usually contain matter requiring more or less deep attention, it has occurred to me that possibly a stray article, requiring no thought particularly, might contain something of interest medically, and at the same time act as a sort of relaxation from the heavier reading. This is not, therefore, like the newspaper articles of the patent "medicine man," giving promise of something wonderful, so be warned in time and do not proceed further, unless you have both time and inclination.

As all roads lead to Rome, so all the London streets lead, as it were, to the "Bank"; there, one preferably climbs to the top of a "bus" and takes his way down through the celebrated, far-famed Whitechapel district, and, until the 'bus

turns into the wider thoroughfare of White-chapel road you are continually on edge, fearing that the horses may fall, that the 'bus may topple over, and you're morally certain that a collision is coming the next instant.

However, nothing ever happens amiss, and after twenty minutes' ride the hospital is at hand. As you approach it for the first or the fiftieth time, especially if you are a medical man, you cannot but be deeply impressed by its appearance—old, besmoked and grimy looking as it is. Within those hoary walls the great syphilographer, Jonathan Hutchinson, made his researches, and out from the same walls pour daily hundreds of "Hutchinson's teeth," thousands of "Hutchinson's pills," and occasionally the venerable old gentleman himself walks out, for he still delivers a short series of lectures annually. Here it is that Sir Stephen Mackenzie, whose careful, painstaking work has made his name familiar wherever medical literature is read, still makes his ward rounds for six months in the year.

Other famous men there are whose names are connected with this great institution, and every time we approach it something seems to speak to us from the great gilt letters stretching along the front, proclaiming that this is "the great General Hospital for East London."

East London comprises some million people, and when it is learned that this is the only hospital for all these people, poor as most of them are, too, some idea of the enormous material and great work of the hospital can be obtained.

For the unhardened visitor enough of gruesome maladies are seen to keep him shuddering and imagining for days; for the post graduate student the work is so various, the departments so full of material, the opportunities for examinations so free, that he can spend a year and then not be familiar with all the work of the hospital and the chiefs in charge. For example, suppose a morning be spent in the skin clinic; there from 9 until 12 one can see case after case admitted to the physician's consulting room, the simpler of which are merely looked over and given treatment, while the more interesting ones are thoroughly examined, the diagnostic points demonstrated, the patient passed around for the critical examination of each man. Here, in the course of a few hours, you can see every skin lesion, from the rare Paget's disease to the common tertiary, from the rare lupus vulgaris to the ever-present scabies.

When the clinic is over, it is both interesting and instructive to go into "Queen Alexandra's Light Department," and there see dozens of cases being treated by the Finsen light.

In the medical, surgical, gynecological, orthopedic, aural, dermatological, dental, etc., etc., rooms of the out patients, literally hundreds upon hundreds of cases are to be seen and examined each day; when it is learned that last year there were over one hundred and sixty-two thousand cases treated in the O. P., the above statement will not seem an exaggeration. The hospital comprises several enormous brick buildings, none of them over six stories, however, and the new O. P., which is claimed to be the most modern, the most thoroughly equipped, and the largest of its kind in the world.

It is in the wards, though, where the post graduate is allowed the greatest freedom, that he will derive the most benefit, because where there are so many patients there are always some cases of special interest, many chronic cases, and many typical text-book pictures, available for the bed-side teaching that goes on each day in the wards, as well as in the post-mortem rooms, where there are from two to six or more post-mortems daily.

By the payment of a very reasonable fee to the hospital the qualified man is admitted to all hospital practice, which means that he is given free access for one year to the wards, for the examination of any patient, unless obviously too ill to be disturbed, to the autopsies, laboratories, lectures, etc. This, so far as my knowledge extends, is very different from any course we have in the States, with the exception of Johns Hopkins, where, for three months only during the year, something like the above is to be obtained, though with many more restrictions. Is it not to be deplored that we have not some such facilities at home for the young and inexperienced graduate, and is it to be wondered at that a great many of our young men have home yearly for England and the continent?

In conclusion, let me advise any medical man when visiting London not to fail to go to the London Hospital. Below is a passage copied verbatim from the yearly report of the hospital, which will certainly strike whoever reads it as unique:

"It is the largest hospital in London, doing nearly the work of any two others combined. It is also the largest children's hospital in London. Last year there were 13,160 in-patients

and 162,147 out-patients. This means 162,147 separate people, not that number of attendances; or, if you like to put it in a more realizable form, we treated in 365 days, 66½ miles of human beings standing close side by side.

"To these poor people we dispensed 2,500,000 pills, and about three tons of cough lozenges, during the year. In dressings they used 92 miles of lint, 476 miles of bandages, and also six tons of cotton-wool, and nine miles of plaster. Every day they consumed half a ton of ice and 400 siphons of soda water, and in the year, six and a half miles of eggs. Their milk bill was £3,500, and their butchers' bill £5,300."

BURNLEY LANKFORD, M. D.

Book Notice.

Text Book of Practical Gynecology for Practitioners and Students. By D. TOD GILLIAM, M. D., Professor of Gynecology in Starling Medical College, Columbus, Ohio, etc. *Illustrated with 350 Engravings, a Colored Frontispiece, and 7 Full Page Half Tone Plates.* Philadelphia: F. A. Davis Company, Publishers. 1903. Cloth. 8vo. Pp. 634. \$4 net, delivered; Half Russia, \$5.

This new claimant for professional attention and as a students text-book is well gotten up, well arranged, and describes the various subjects considered in a pleasing, readable manner which gives an intelligible impression. While we can scarcely recognize anything specially new or original in the work, it presents the entire subject of gynecology as now understood in a clear light. Few omissions are made. Descriptions of operations and treatment are well given. For the practitioner, it may remind him too much of the college days in the division of the chapters rather as to the length of time it requires to read them than as to a connected whole. For the practitioner who has to depend on authority for each step he takes in diagnosis or treatment, this book will be found a safe guide. The illustrations are good and most of them helpful. The frontispiece illustrates the arterial supply of the genital apparatus which every gynecologist should keep pictured on his memory, when he undertakes any deep seated operation upon woman. Beside the table of contents, the Index, so far as we have examined it, is full and correct. All in all, it is a first class work, neatly issued by the publishers.

Editorial.

Marriage of Gonorrheics, Syphilitics, etc.

No one could have read the article in our November 27th issue, by Dr. Joseph Taber Johnson, Washington, D. C., without being impressed with the live importance of this subject. With reference to the vice of illicit intercourse, man is so constituted that it has been written of him: "Let him who is innocent throw the first stone." And as long as this innate passion exists, there is danger of his becoming venereally infected, and of infecting the innocent, confiding woman who may become his wife. If the transgressor alone were the sufferer, the punishment he receives in becoming infected might be counted a just retribution. But unhappily, such is not the case.

It is appalling to think of the magnitude of the crime of illicit intercourse between the sexes—even of our own country. According to statistics quoted by Dr. Johnson, there are about 300,000 prostitutes in the United States known to the police and the public generally; and if every day evidence about such matters can be computed, it is safe to say that there are about 500,000 just as bad—women not on police registers nor *commonly* known to the public, but who, from one consideration or another, meet assignments with men they scarcely know. This estimate does not include the relatively fewer cases of seduction, or the yielding of the woman to the embraces of the man she loves, but whom circumstances prevent from marriage. But if the estimate of 300,000 publicly known prostitutes, and of the additional 500,000 "street walkers," etc., who "do it on the sly" be approximately correct—approximately 800,000, practically speaking, "common women" in the United States—then we have appalling figures.

The population of the United States, in round figures, is about 80,000,000. Of this number about 43,000,000 are male and 37,000,000 female—of all colors and nationalities. Taking up the females, we may eliminate from our calculation at least 17,000,000 as being girls under puberty and old women, and we have scarcely 20,000,000 left who are in the sexual period of life. Now, if the estimate of 800,000 prostitutes and "common women" be correct—including all colors and nationalities—then the computation would be that about one woman out of

twenty-five during their menstrual age is liable to the venereal dangers of such a life!

As to the male sex, there are relatively so few who have not at some period of their adult lives gone astray that the number may be put down as inconsiderable. This is a shocking confession, but nevertheless must be recorded. Let us presume that there are 25,000,000 males in this country of the so-called "military age"—from 18 to 45 years of age; and then keep in mind that, *practically speaking*, all of these have, at some period of their lives, had illicit intercourse, then we may get some general idea of the widespread dangers to venereal diseases that men expose themselves to.

There are not obtainable any definite statistics as to the number of cases of venereal diseases among the estimated 800,000 prostitutes and common women. It would not be far from the mark to presume that about one in five of these has or has had gonorrhœa, chancre or syphilis at some age of their lives, and it may be estimated that at least one of fifteen men have, at one time or another, had a venereal disease.

It may be true that the majority of men having venereal disease are in the humbler walks of life, who are not acquainted with its dangers. But it is nevertheless true that these men, as well as those "of society standing" seek the virtuous of their social class to become their wives. Whatever may have been their own vices, they ignore the harlot when they seek to establish their own home circles. They instinctively seek and expect virtue on the part of their wives, and as instinctively resent any known approach or invasion of the purity of their homes in this respect with the club, the knife or the shotgun.

But what are these men doing in marrying the innocent, confiding, virtuous woman? Many a grave in the cemetery containing the remains of the wife answers the question. Many an unsexed woman because of the necessity of the surgeon's knife in doing an hysterectomy or an oophorectomy or other like severe operation gives further answer. Many an invalided wife who refuses the help of the gynecologist gives a bitter emphasis to the query. And still the story is told by many a case of syphilitic infection of the mother and of hereditary syphilis in some of its hideous phases in the children, or it may be told by the gonorrhœal ophthalmia neonatorum which so usually causes permanent blindness.

It may be that such results generally come of ignorance on the part of the husbands and fathers as to the dangers of their marriage; for men who are less than brutes would not purposely nor knowingly subject those they love "as their better halves" to such dangers. Who is responsible for this widespread ignorance? In too many instances the fault lies at the door of the doctor, for he is generally consulted for the venereal disease which has infected the man. Too often upon insufficient data, or because of an under-estimate of his professional duty and responsibility, does he dismiss the patient with the idea that he is well and marriageable, upon the disappearance of the yellowish urethral discharge, while yet the evidences of gleet or urethral stricture or of constitutional syphilis, it may be, remain. If perchance, the marriage is to be with a daughter or sister of some intimate friend or near and dear relative, advice to postpone marriage until absolutely cured would be insisted on. But if the expectant bride is unknown to the doctor, or if simply acquainted with her or her family, his partisan friendship (?) for his male patient leads him to be silent in advice or even congratulatory in the acceptance of his recent venereal patient by the unsuspecting, confiding woman.

Just here there is need of very decided reformation in the doctor's practice. As he is presumed to be a healer of the sick, so is he supposed to be an adviser as to the preservation of health and the prevention of diseases. When small-pox threatens, he is positive enough as to the necessity of vaccination or revaccination. He is constantly studying out and popularizing the means for the prevention of typhoid fever. He warns against the dangers of intermarriage of tuberculosis patients. He tells the public of the dangers of diphtheria, and quarantines the household in which the disease exists until walls are scrubbed, scraped and repapered or repainted, and carpets and bedclothing and wearing apparel, etc., are antiseptically fumigated, etc. He is outspoken about all such things. But from a false sense of duty to his patient, or the fear of offending him, or because of moral cowardice, he fails to point out the dangers in such language as to leave its strong impression, of the marriage of the venereal patient until he is thoroughly and positively cured. He may tell such patient to let him know promptly if any sign or symptom should develop in the wife, instead of boldly and in the most positive manner advise against the marriage. Too often, we

fear, the doctor allows himself to become participant criminis in knowing that the lighted torch of disease is about to be applied which is to consume the health and happiness of home life. The virtuous wife is too sacred a being to be sacrificed by such sins of the husband. Let us as true physicians cry aloud against such wrongs to the innocent. Let there be a decided professional reformation in the unmistakable advice we should strongly give along the lines of suggestion we have brought out.

The Medical News Visiting List for 1904

Is now ready. It is a pocket-sized, wallet-shaped book, containing memoranda and data important to every physician, and ruled blanks for recording every detail of practice. It is issued in four styles—weekly, monthly, perpetual and for 60 patients a week. The latter style consists of 250 pages of ruled blanks alone, without printed matter. Each is bound in flexible leather, with flap and pocket, pencil and rubber, and calendar for 1904 and 1905; price, \$1.25. Thumb letter index, 25 cents extra. Sent by mail postpaid by the publishers, Messrs. Lea Brothers & Co., Philadelphia or New York.

Obituary Record.

Dr. James McFadden Gaston, Atlanta, Ga.,

Died at his home on November 10, 1903, aged nearly 79 years. He was born in Chester District, South Carolina, December 27, 1824. He received his academic education from the schools of his district, and the title of Bachelor of Arts from the South Carolina College. He was graduated Doctor of Medicine from the Medical College of South Carolina in 1846. During the Confederate war he served as surgeon in that army. After the war he moved to Atlanta, Ga., and was professor of surgery for a while in the Atlanta Medical College. Before the war he was professor of Principles and Practice of Surgery in the South Carolina Medical College. His honors were numerous. He was an ex-president of the American Academy of Medicine, ex-chairman of the Section on

Surgery and Anatomy of the American Medical Association, and was a member of various other associations—national, sectional, and State. In 1895, he was elected an Honorary Fellow of the Medical Society of Virginia, attended several of its sessions, on which occasions he contributed valuable papers and participated in scientific discussions. He was a frequent contributor to the pages of various journals—his papers being always in demand. He contributed the article on Gall Bladder Surgery in the *Supplement to the Reference Hand Book of Medical Sciences*, and was the author of standard papers in the *Annual of the Universal Medical Sciences*. Genial in spirit, high minded in all that pertained to the honor and dignity of his profession, kind and generous to the younger doctors, he has left a record worthy of emulation.

William Matthew Warren.

The directors, executives and employees of Parke, Davis & Co., Detroit, Mich., in loving memory of a beautiful and beneficial life, in an "In Memoriam," have touchingly expressed their sorrow and heartache caused by the death of their general manager, Wm. M. Warren, who died at home November 11th, aged 39 years. Entering the service of Parke, Davis & Co. when only 17 years of age, he rose steadily through its various grades until at 32 years of age he filled the highest place in the gift of the house—in which position he served continuously for seven years—until his death. His life work is another illustration of what fidelity to duty may bring any beginner in business or in professional life.

Dr. A. P. Bowles

Died suddenly at his home, Scottsville, Albemarle Co., Va., November 24, 1903. Under the old law, he passed the Medical Examining Board of Virginia 1894—the year before his graduation from the Medical College of Virginia. He joined the Medical Society of Virginia 1897, and attended several sessions. He was a genius—manifesting itself in discussions of papers, in the report of cases, in his own practice, etc. His wit was proverbial among those who knew him. He had a big heart, was a warm friend, but not so bitter in his dislikes as not to recognize the good in others. He leaves a widow and two children, and a host of friends to mourn his loss.

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Original Communications.

RUPTURE OF THE BLADDER.

By JOSEPH B. BISSELL, M. D., New York, N. Y.

Rupture of the bladder is an accident, which like some other injuries to deeper seated organs is not frequent in general practice, yet is common enough so that every practitioner of medicine is liable to meet with it. Usually associated with a complicating injury, often extensive in itself, it occurs also, either alone or where it is the most dominant condition, and where the operative treatment is essentially limited to this viscus. It is this class of cases which is under consideration.

It seems to the author that the more widely a good working knowledge of the etiology, diagnosis and treatment of this condition is disseminated the greater the chance of a good result. If the general practitioner keeps fresh in his mind the recent advances in the treatment of these injuries the more likely he is to realize the necessity of an immediate diagnosis quickly followed by operation, thus obtaining for the patient the best chance of recovery. It is essential, moreover, if compelled himself to assume the responsibility of operating, that he know how much can be done for these injuries by bold and at the same time conservative surgery.

Up to within a few years it was assumed by some of the most skillful of surgeons that once the urine had escaped into the peritoneal cavity it was beyond the power of surgery to help. So eminent an English authority on surgery as Mr. Syme is quoted as saying, "If rupture take place above or within the reflection of the peritoneum there cannot be the slightest chance of escape."

This axiom is certainly no longer true, and although no one at present believes a proposition so hopeless, still the lapse of several hours

*Read at a meeting of the Society of the City Hospital Alumni, May 13, 1903.

between the time of the injury and the time of opening the abdomen in order to repair the bladder, is looked upon as a fatal delay. That this is not true has been proven repeatedly in the past few years. In one case reported, operation was not performed until ninety-nine hours after the injury, and recovery took place. Such cases as this and others quoted in the paper of Dr. Sam. Alexander, read at the meeting of the American Association of Genito-Urinary Surgeons, April 30, 1901, where there had been forty, fifty-four and sixty-six hours intervening respectively between the receipt of the injury and the time of the operation, show that a long time, even days may elapse before operation, and still recovery may be looked forward to with confidence.

To the older surgeons peritonitis was the bugbear in these injuries. Since their time we have been taught by Clarke, of Johns Hopkins, and others how easily the peritoneum, if not too badly injured, or not too much interfered with by injudicious surgery, can take care of and absorb large quantities of deleterious bacteria and their poisons without harm and without setting up a fatal peritonitis or septic infection.

Normal urine carries nothing infections into the peritoneal cavity. The urine of a diseased bladder is a dangerous element—the amount of danger depending upon the kind of cystitis at the time of the rupture, the amount and virulence of the bacteria, and length of time they have had to act upon the peritoneal cavity. It follows from this that the prognosis of operative interference in such an injury, particularly if it invades the peritoneal cavity, may depend greatly upon whether the patient has had or has now a cystitis or a ureteritis.

Dr. Alexander in his very instructive paper, classifies ruptures of the bladder as follows, in four general divisions:

- I. Intra peritoneal, traumatic,
- II. Intra peritoneal, from other causes,
- III. Extra peritoneal,
- IV. Intra and extra peritoneal combined.

These may be simple or complicated. Under Class II is included rupture from the result of disease, or by accident, during a surgical operation. The following cases are examples of the first, second and third classes, and illustrate practically the symptoms as well as the etiology, diagnosis and treatment of a case of rupture of the bladder. For this reason they are given somewhat in detail. The cases occurred in the service of the writer at St. Vincent's Hospital. They are taken from the hospital history books:

Case 1. — Extra-Peritoneal (post-vesical) Rupture of the Bladder, Laparotomy, and Perineal Drainage. Recovery.

J. S. 29 years old, married; driver and helper in a livery stable; admitted to the hospital by ambulance, November 7, 1902. This morning he fell thirty feet down an elevator shaft in the stable, striking in a sitting posture, but mostly on his right buttock. He got up immediately and walked several steps, but complained of severe pain in the head of the penis. Did not feel very sick at first. Had a strong desire to urinate but could not, though a few drops of blood came from the urethra. The desire to urinate was intense. He had emptied his bladder not over fifteen minutes before he fell. On admission his temperature was 99; pulse 60; respiration 26. Pulse intermittent and small; breathing quiet; patient very thirsty; pain and tenderness in right inguinal region extending to left hypogastrium; abdomen somewhat rigid and pain increasing. Patient still having constant desire to urinate. Catheter passed to deep urethra but obstructed just as it reached the bladder. He gave no history of venereal, bladder, or urethral disease; habits good, moderate drinker; has always been healthy and is a strong well-built man.

Six hours after the injury operation under ether. Incision below the umbilicus three inches long in middle abdominal line to peritoneum. On opening this the omentum and small intestines are seen engorged with blood almost ready to ooze out of the serous layer. The peritoneum is studded with very small extravasated patches almost continuous. The serous coat is dark and its luster nearly gone. A tumor the size of a child's head can be seen and felt behind the peritoneal cavity, extending into the pelvis behind the bladder which is collapsed and empty. Hemorrhages into all the visible surface of the peritoneum, but no blood or urine in the peritoneal cavity. The bladder wall when

brought into view also contused and infiltrated with petechial hemorrhages. Abdomen was at once closed and sutured in layers; no drainage. The patient put in position for perineal section and incision made to perineal urethra which was opened, and probe followed by the finger goes into a large laceration of the bladder between the neck and the prostate gland extending transversely into the trigone and toward the right iliac fossa. The rent in the bladder wall is about two fingers' breadth. A large quantity of blood and urine came away on withdrawal of the finger, leaving a cavity in the posterior pouch, covered with peritoneal reflection above, anterior bladder wall in front, and rectum posteriorly.

This space was packed very loosely with strip gauze; a perineal tube was carried into the bladder and left for bladder drainage. The operation lasted forty minutes. The patient returned to bed with pulse 80; temperature 99°; respiration 24.

The patient went on comfortably with no symptoms except slight pain in the abdomen; drainage was satisfactory. On November 11th, the temperature was 99.4°; pulse 84; respiration 22, the highest temperature since the operation. On this date the abdominal dressings were changed. Wound apparently closed. There was no sign of peritonitis. November 14th: Temperature 98.6; pulse 82; respiration 24. Tube removed from perineal wound, which is clean and granulating. Abdominal stitches removed.

November 25th, with a sudden rise of temperature to 100.4 a small stitch abscess appeared at lower end of abdominal wound. It was opened and on December 3rd it had entirely healed. No other symptoms have developed throughout the patient's convalescence, and on December 3rd he was discharged cured.

Case II. — Intra-Peritoneal Rupture of Bladder. Laparotomy; Suture of Bladder and Drainage by Perineal Route. Recovery.

Williams S., 48 years of age; single; iceman; February 17, 1903, while loading his wagon a 250 pound cake of ice fell from the bridge and struck him on the lower part of the abdomen. It fell about three feet. He was knocked down and was unable to get up. Ambulance brought him to hospital. He had urinated a few minutes before the accident. The pain in the abdomen was very severe. He was unable to walk or stand and complained also of great desire to urinate, but was unable to do so. He was hurt

about ten o'clock in the morning, admitted to the hospital about eleven. On admission his general condition was good; pulse, 90; temperature, 99.5; respiration, 22; legs drawn up and he is suffering great pain in the lower hypogastrium. Catheter passed easily and drew off apparently clear blood. No other symptoms. Patient was stout, robust, and had never been ill or injured before. No venereal, bladder or urethral disease. A heavy drinker. Had had several glasses of beer in the morning before his injury. Taken to operating room at 3 P. M., five hours after injury. Median laparotomy, incision extending from just above the pubes to two inches of umbilicus. On opening the peritoneum blood gushed out of the cavity and was seen to come from a lacerated bladder wall. Hemorrhage quite active, but easily controlled by grasping the tear. No injury of other organs could be found. A long silk ligature was carried with a needle through both sides of the tear and used for retention and retracting purposes. The blood was sponged out and examination showed the rupture to run the entire length of the posterior surface of the bladder wall from the top to the base and slightly to the left as it went downward. The laceration continued into the perineal folds above and below, running toward the anterior wall about $1\frac{1}{2}$ inches, and to about the same extent below into the posterior fold of peritoneum. No other lesions were found. The bladder tear was sutured with a continuous row of catgut through the muscular and submucous coats, not piercing the mucous layer, great care being taken to approximate the tear at its lowest angle. A second layer above this line of suture included the edge of the peritoneal coat with the muscular. A third layer rolling in the serous covering, and over this for extra security a fourth layer was inserted—the latter two lines of sutures being practically a continuous Lembert. The peritoneal tears in front and behind were sewn up with fine catgut. The peritoneal cavity was then carefully and rapidly irrigated with hot saline solution. The peritoneal wound was closed with catgut, and the muscles and skin with catgut and silkworm gut. Following this, with a staff in the urethra, a quick perineal section was done, a large tube put in the bladder through this opening, packed around with gauze, drainage established by means of hot sterile irrigation into the bladder through the tube and the patient returned to the ward at the end of one and a half hours from the

time he left it. This time could have been shortened considerably but for the delay caused by the difficulty in accurately approximating the deep seated end of the rupture. His pulse became quite rapid during the operation—as high as 140—but was 100, temperature 99.6, and respiration 28 at five o'clock P. M., the day of the operation.

February 18, 1903, the following day, his temperature was 101, pulse 108, and he complained of considerable pain in the abdomen, made worse by a troublesome cough.

February 19th, cough is worse; expectoration tinged with blood, crepitant rales, and slight dullness over left lower lobe of lung, temperature 102, pulse 120. The wound in the abdomen was dressed and appeared closed, but the constant cough caused considerable pain in the abdomen and tension on the stitches. Drainage from bladder good.

February 23rd: The pneumonia is improving, his general condition excellent, but there is pus in the lower silkworm sutures. They were removed, and the wound cleaned out. Suppuration was only in the superficial abdominal layers.

March 6th: Drainage tube removed several days ago. Patient urinated through the urethra and also through the perineal sinus. The abdominal wound is granulating up nicely. His pulse, temperature and respiration are normal.

March 10th: Urinating both ways, but has perfect control of the bladder, holds urine for six hours at night.

April 10th: Patient discharged to-day cured. Perineal wound has been completely closed some days, the abdominal wound is also united. Has slight cough, but chest has cleared up.

Case III.—Intra and Extra-Peritoneal Rupture of Bladder.

J. R., 33 years of age, July 31, 1901. He was struck by a 38 calibre pistol ball while stooping over. It entered the outer side of left thigh about three inches below great trochanter, taking a direction upward and inward. No discomfort except dull pain in left thigh, and profuse hemorrhage, some desire to urinate, but as he had urinated immediately before the accident the house surgeon did not catheterize him. He was brought to the hospital by the ambulance at 11:30 in the evening; at 6:30 next morning, August 1st, is still unable to urinate, although having considerable tenesmus, some pain, and rigidity in lower abdomen. Catheter was passed

and blood clots obtained, but no urine. Temperature, 100; pulse, 110; respiration, 24. Patient became rapidly worse, signs of general peritonitis supervened, and patient died at 2:30 in the afternoon. Autopsy showed perforation of the intestine in several places, and intra and extra peritoneal perforation of the bladder and general peritonitis.

Case IV.—Prevesical Perforation of Bladder.

L. S., Italian boy 6 years old; injured by falling against a projecting object, brought into the hospital several hours after injury with tympanitic abdomen; tenderness above pubes; general abdominal pain, especially in the hypogastric region. Pain and desire to urinate marked; catheter brought clear urine, no blood. Died three days after admission; autopsy showed a stellate laceration of the bladder behind the pubes, general peritonitis, separation of the mesentery from the intestines at several points, hemorrhage in the peritoneal cavity. I have quoted this case merely to show that reliance on catheterization for diagnosis is uncertain, likely to mislead and therefore unsafe.

REMARKS.

In the cases detailed above, shock was not very great. Indeed it was slight excepting in Case No. II where the extensive contusions of the intestines and omentum accounted for it. It was not severe enough to contra-indicate laparotomy. Even when severe it is safer to risk the danger from shock than the chances of infection from a diseased bladder.

CAUSES.

The classical causes of rupture are well shown in these instances. However, it is seen from two of them that it is not well to assume that the bladder has escaped because a patient tells you he has emptied it shortly before he was injured. The second patient insists that five minutes before he was hurt he had urinated. Yet in his case the rupture was colossal. The rent ran the whole length of the back of the bladder from the fundus to the neck, and for an inch and a half into each fold of the peritoneum as it was reflected toward the rectum behind and to the abdominal wall in front.

Curiously enough the patient J. S. also insists that he had emptied his bladder but a short time before he fell. His rupture was very evident, and although in an unusual situation was a dangerous one.

DIAGNOSIS, SYMPTOMS, ETC.

A most important symptom in the diagnosis is the urgent desire to urinate with inability to do so. In addition great pain is usually present with a rigid abdomen. Excluding a ruptured urethra, bloody urine by catheter must come from the bladder, ureter or kidney. If from either of the latter, the patient can usually voluntarily expel it, and the quantity of urine and blood will be considerable. In a ruptured bladder the fluid drawn by catheter will be mostly blood, and there will be no previous history of hematuria. The test by injection of a stated amount of fluid and its return intact involves the danger of infection and is often fallacious for the opening may be small, or a valvelike occlusion of the slit may close it. If the rupture is extra peritoneal, i. e.: into the rectovesical or prevesical space, nearly or quite the same amount of fluid may return. Introducing filtered air or a gas is to be condemned as dangerous and uncertain.

The loss of time involved in these tests is of vast importance aside from their unreliability. The danger of infection in the rather tedious and injudicious manipulations in making them is a grave, and ever present danger. In the last case quoted above as in a case of a colleague, where there was a severe abdominal injury, damage to the bladder was excluded because clear urine was drawn by catheter. A subsequent laparotomy showed a rupture of the bladder low down, some urine in the peritoneal cavity, the bladder itself nearly full of apparently clear urine, at the bottom of which was a little pool of blood.

The diagnosis of rupture of a bladder is as a rule easy. Given the history of a fall, or an injury to the abdomen or pelvis, with great pain in the hypogastrium, a rigid abdomen, intense desire and inability to urinate, and a wound of the bladder is so strongly probable that laparotomy is imperatively indicated.

A history of a distended bladder is not necessary although if that be given it only confirms the indication for immediate operation.

TREATMENT.

The treatment consists of operation at once, clearing out the peritoneal cavity, closure of the rent when it can be reached, and drainage of the bladder. The earlier the operation the better the prognosis. The operation is in detail as follows:

The usual incision for supra-pubic cystotomy is made, the prevesical peritoneal reflection pushed upward and a rent in the anterior surface of the bladder looked for. When found, if not too badly contused or lacerated it may be sewed up as described later in intra-peritoneal rupture. If pus is present or if there is cellulitis or the bladder wall is badly damaged, a large tube is inserted into the bladder and left through the abdominal wound for drainage and irrigation, the bladder wall being closed around it.

If the rent in the bladder wall goes into the peritoneal cavity the peritoneum is to be opened sufficiently to expose the whole extent of the tear. If there is no rupture of the bladder in this prevesical space two alternatives present. Either we can open the bladder wall here, and examine with the finger and by inspection the inner surface of the bladder, or we can at once open the peritoneum and examine the cavity for evidences of injury. This latter expedient is my personal preference, and for these reasons:

If the intra peritoneal rent is a large one the bladder is collapsed and it is often difficult to open it in this part of its circumference. It is a loss of time. It increases the shock and the danger from hemorrhage. It increases the amount of damage to the bladder wall, and as usually the peritoneal cavity has to be opened in any case in order to properly close the laceration it might as well be done immediately. Moreover these injuries usually necessitate examination of the abdominal cavity, and an exploratory laparotomy will do no harm. Therefore as soon as the prevesical incision down to the bladder wall shows no injury, I at once open the peritoneum and examine the cavity carefully, cleansing the blood and urine from this space, if present, with warm saline solution. The tear is exposed its whole extent. Hemorrhage, which usually has ceased, if present, is controlled and the wall of the bladder sutured with chromized or ten day catgut in three layers—the deepest through the muscular wall, to the mucous lining, but not including it, making an accurate closure; the second into the muscular coat and peritoneal covering; and a third layer like a Lembert suture of the intestinal peritoneum, folding in the peritoneal coat over and completely sealing in the last line of sutures with a coating of the bladder wall peritoneum. If it is an extensive rupture a fourth layer of stitches can well be used. These are all continuous sutures. If this has been done carefully there is no need of

any injection test to determine if the rent be tightly closed. This is a waste of valuable time and may do damage by infection, or by overstraining a weak point which nature in a few hours would have made adherent and firm. The rent in the peritoneum running from the bladder in opposite directions toward the rectum and toward the urachus, which usually occurs the same time that the bladder is injured, is to be picked up and carefully sutured. Then comes the most important question, that of drainage. As to the peritoneal cavity, if it has been carefully and gently cleansed with hot saline, and if the rupture is recent with no history of a diseased bladder, and if no signs of peritonitis are present, it can be closed at once, no matter if a number of hours have elapsed since the injury. If there are suspicious signs or the previous bladder history is doubtful, it is wise to leave in the pelvic cavity one or more gauze drains, preferably the cigarette drains. These are to be taken out in the next forty-eight hours.

As to drainage of the bladder there is no question. In order to have this rent quickly and properly sealed, there must be free escape for the urine in the easiest direction as soon as it enters the bladder so that its walls may not be put on stretch, and thus disturb the closure of the rupture. A self-retaining catheter may be kept in a healthy urethra and bladder neck without spasm, irritation, or pain, provided the patient's urethra, his surroundings, and the personal care and attention he receives are of the best. If these conditions cannot be obtained, and it is not often they can be, it is better to make a continuous drainage through the perineal urethra by means of a large tube securely fastened just within the bladder.

If the rent extends so deeply along the posterior wall of the bladder that from its inaccessibility complete closure at this point is not certain, then this form of drainage will neutralize such a possible defect and prevent it from interfering with the cure. Such defective closure ought not to occur, as by making a long enough abdominal incision and using the Trendelenberg position it is possible to reach any tear extending even into recto-vesical space itself.

I prefer this form of drainage to that above the pubes unless the bladder wall is so badly injured that it is impossible to do an accurate suturing. The cut for drainage by the perineal route can be done easily and quickly while the patient is still under the anæsthetic. It does not

prolong the operation any appreciable length of time. It allows drainage in its proper direction, downward. The opening heals more quickly than a supra-pubic one. It produces less discomfort to the patient, and if a sinus remains it is in a less disagreeable situation and usually responds better to operative treatment for its relief. Frequent catheterization at regular intervals through the urethra is not to be trusted. It is uncertain. The intervals are apt to be irregular, the danger of infection is always present, and as the kidneys of different people secrete different amounts of urine at different periods of time, and even in the same person different amounts under different surroundings and circumstances, it fails to accomplish its object, that is to keep the bladder empty for the first forty-eight hours.

Distension of the bladder by means of urine accumulating in it separates the mucous membrane adhesions, and defeats the object we are trying hard to attain, i. e., perfect and early agglutination of these ruptured surfaces. Any accident to the continuous drainage, as an obstruction in the tube from clot or calculus or mucus, may be fatal to our hopes of rapid and uninterrupted recovery. Therefore it is essential to whoever is looking after the details of the after treatment that the importance of these points be understood.

The treatment of that third class of cases, where the injury is extra peritoneal behind the bladder, is quite simple. The diagnosis having been made by a laparotomy or in other ways, perineal section is carried out to the bladder neck, and into the rupture behind it, thus obtaining thorough drainage and irrigation.

Where the patient is not seen until late after extravasation into the tissues has taken place, and cellulitis and suppuration are present, often the treatment is that for extravasation of urine, i. e.—free incisions in all directions into the sloughing tissue with drainage and irrigation to these places and the bladder.

PROGNOSIS.

The prognosis in ruptured bladder depends upon the time which has intervened between the accident and the operation, upon the antecedent pathology of the bladder and its adnexa, upon the amount of peritonitis present in intraperitoneal cases, often upon the rapidity of the operator, upon the completeness and the perfection of the bladder drainage, and upon the accu-

racy of the restoration of the lacerated bladder walls.

46 West 55th St.

PREVENTION OF THE SPREAD OF RINGWORM.*

By F. H. BEADLES, M. D., Richmond, Va.,

Lecturer on Diseases of the Skin, Medical College of Virginia;
Dermatologist to Free Dispensary, Medical College of Virginia.

Writers from the time of Celsus to the present day have endeavored to improve the nomenclature of the mycotic group. It has long been undisputed that the various lesions described under the title of ringworm are due to the presence of a vegetable parasite in the epidermis, hair follicles, hair or nails. Up to the present decade the fungi found in the various forms of ringworm were believed to be identical. More than fifty years ago Gruby indicated a division of the fungi causing ringworm. But his wonderful discoveries were not only unappreciated, but unrecognized, and the trichophyton was accepted by most physicians as the sole factor in all ringworm cases.

Sabaraud, with the advantage of more modern training and inexhaustible patience, brought this subject to a higher plane, both clinically and pathologically, and established, beyond question, the division of ringworm into two classes—the microsporion audouini, or small spore fungus, and the trichophyton, or large spore fungus, the latter being again subdivided. He frankly admits his work to be simply an elaboration of Gruby's discoveries.

Encouraged by the brilliant results of Sabaraud and stimulated by the necessity for conquering this ever-increasing disease, hundreds of workers have begun the investigation of this subject and have made valuable additions to our knowledge of ringworm fungi.

In this paper the writer desires to point out, as briefly as possible, some of the mediums of transmission. Among these may be mentioned some of the lower animals, as the dog, cat, bird, horse, cow, mouse and sheep and many others. That domestic animals and pets are great transmitters of this disease is proven by the

*Read by title before the 34th annual session of the Medical Society of Virginia held at Roanoke, September 15-17, 1903.

fact that fungi derived from animal sources, though of different species, show a greater vitality than those derived from human sources. Experience proves that the nearer a fungus is to its animal origin the more rapid its growth; also that it loses its vitality by human transmission.

Recently the writer had presented a case of body ringworm. In the house of the patient was found a mangy cat. Microscopical examination disclosed the presence of the same fungus—the ectothrix—in the lesions of both the patient and the cat, thus confirming the suspicion that the disease had been contracted from the cat.

Animals, however, cannot be held entirely responsible for the transmission of this disease when we consider the excellent opportunities for diffusion offered by barber shops, bath houses, asylums, day nurseries, and, last but not least, our public schools. That barber shops and hair-dressing establishments play an important part in the transmission of these diseases is not to be wondered at when we remember the usual unsanitary condition of these shops of infection.

The disease is not, as is popularly supposed, conveyed by the razor, but by the barber's hands or towels and oftenest by the lathering brush. Not only is the adult exposed here, but frequently the innocent child who has his hair cut brings away as a souvenir of the occasion a fine case of scalp ringworm.

And now for its widest field of action. In our schools, side by side, are seated children from all kinds and conditions of homes. We are not surprised at the increase of this disease when we consider the facility of transmission of fungus either directly from child to child (through the medium of some contaminated article) and sometimes even by means of the air alone when there are many affected children congregated. It flourishes more readily in badly nourished or uncleanly children, yet I have met extremely obstinate forms in otherwise healthy children. The gregarious habits of children, the frequent and intimate character of contact in their amusements and studies, and their indiscriminate use of hats, caps, etc., greatly increase the chances of contagion when one of their number is affected with this condition.

Our public schools require certificates of vaccination or of recovery after the acute infectious diseases, yet children affected with scalp ringworm are allowed the privilege of the school room, scattering contagion broadcast. Although

its effect upon the skin is usually insignificant, its occurrence in a family or school is a real calamity, owing to its contagiousness and the social ostracism it entails. Frequently these diseases are brought into a school and there disseminated to the extent of an epidemic, thereby seriously interfering with education. It is a common occurrence in my clinic to find cases of scalp ringworm and, upon questioning the individual, to learn that they are in attendance upon school.

We, as physicians with the aid of the Modern Medical Society can do much to correct these evils. That the number of cases of vegetable parasitic disease transmitted through our public schools is steadily increasing is proven by statistics and calls aloud for legislative restriction. Since 1844 Paris has had physicians as school inspectors and now Paris, Brussels and Rome have separate schools for children suffering with ringworm. During their residence in these schools, children receive education and treatment under the care of physicians. For fifteen years legislation through the efforts of the Medical Societies was sought in New York, but in vain. It was only when they entered the political field and publicly called legislators to account that they succeeded in establishing the Metropolitan Board of Health, the first of its kind (based on sound sanitary principles) in this country. Many other cities, among them Boston, Philadelphia and Chicago have realized the enormity of this evil and have appointed school inspectors, either physicians or nurses, whose duty it is to visit the schools as frequently as possible and indicate to the teacher or principal each child affected with any contagious disease, parasitic or otherwise. All suspected cases are immediately excluded from the school until they can furnish a certificate from their attending physician stating that all danger of contagion is removed. Physicians attending such cases should withhold the certificate for several weeks after the disappearance of all diseased hairs and stumps.

If the case exist in a boarding school or asylum the patient should be isolated if possible and all others who have been exposed be subjected to a thorough examination, sparing neither time nor trouble, and giving careful attention to all isolated stumps and suspicious scaly patches. The appointment of medical inspectors in the schools shows gratifying results, not only in the decrease of the per cent. of cases

but also in the personal hygiene of the children, those who formerly came to school unclean gradually improving in their appearance and habits. Parents, to whom this disease is the source of much anxiety, soon learn to appreciate the value of these measures and acquire a better understanding of the necessity of isolation. The writer would urge greater frankness to ourselves as well as to our patients in dealing with these diseases. The practitioner sometimes fails to appreciate the importance of detail, and carelessness in this respect is responsible for a number of cases.

The physician's first duty in the management of ringworm is to prevent the spread of the disease to others. He should insist upon an examination of all other children in the family or school and, while making such examination, he should not forget that his hands, if not properly cleansed, may convey the disease to those as yet unaffected. The scalps of all the children should be thoroughly washed several times a week until all danger of contagion is past.

The individual under treatment should be required to sleep alone and use separate towels, combs and brushes, these articles being frequently sterilized to prevent reinfection. All domestic animals or pets which are found to be mangy should be either destroyed or isolated until by proper care they can be rendered incapable of the transmission of the fungus. As a rule the poorer the people the larger the number of cats and dogs they possess. The extra tax recently imposed by the legislature has done much to decrease the number of these nuisances and so lessen this means of transmission. The establishment of sanitary barber shops where brushes, razors, etc., are sterilized just before being used can do much to diminish this trouble. Persons who patronize these shops should provide their own equipment, whereby they will probably protect themselves from infection. On the other hand, infected cases should not be taken to the barber shop to have their hair trimmed or shaved, but it should be done at home and the diseased hair burned. Briefly considered, this seems a reasonable solution of this evil, and I believe we are justified in requesting the help of the law in our efforts to restrict this disease. Large expenditures are made yearly by both State and city for objects less worthy, yet little thought is given to the physical welfare of the child—the future dependence of our country. Prophylaxis has invaded the domain

of nearly every disease; its science and practice are daily increasing and its field of usefulness becoming better known. Scientific research can demonstrate few more valuable triumphs than the results of preventive medicine.

219 E. Grace St.

HOME TREATMENT OF CONSUMPTION.*

By H. H. LEVY, M. D., Richmond, Va.,

Professor of Practice of Medicine, Medical College of Virginia;
Visiting Physician to Memorial Hospital, etc.

Of all affected with pulmonary tuberculosis by far the greater part find it inexpedient, impracticable or impossible to leave home and take up, for a long period, residence in a sanitarium, or to move to some region, more or less remote, the climate of which is reputed to be beneficial in the disorder which afflicts them. For those who are financially able and in whom the disease is not too far advanced, there is no doubt that a well conducted and well located sanitarium offers the very best means of improving their condition, and even of affecting a permanent cure; and likewise it is a matter of common knowledge that many consumptives have taken up their abode in certain favorable climates, and there practically regained their health while following some avocation which rendered them self-supporting. But, as stated before, most of the subjects of pulmonary tuberculosis are really unable to take advantage of institutional treatment, or to journey to some distant region and there reside. So as the physicians of a community, we have ever before us the problem of caring for at home, in the best manner practicable, a considerable number of consumptives.

At the very start it must be admitted that cases of pulmonary tuberculosis are curable at home. The reports derived from many sources, even after due allowance is made for prejudice and over enthusiasm, show that persons who are undoubtedly phthisical get well under various conditions and diverse plans of treatment. Therefore, we may conduct some of these cases with the reasonable hope of bringing about a cure, while in others our judgment tells us that nothing more than some palliation, or the dis-

*Read before the Richmond Academy of Medicine and Surgery, October 27, 1903.

troubling symptoms incidental to the disease, is to be expected.

It is well that those considered to be likely curable should be told the nature of their disorder, that it is a chronic affection, which will require upon their part the pursuance of a most careful manner of living for a long period in order to regain and maintain good health. The patient should be made to realize that he must subvert his desires and inclinations to the one great purpose of getting well. It is necessary after becoming fully acquainted with his previous health and habits, his intellectual scope and moral strength, his domestic surroundings and social position, to lay out a detailed programme of what he is to do and what he is to avoid. In most instances, it would undoubtedly be politic to gradually evolve this plan; for most of individuals confronted with the proposal to give up *at once*, all or nearly all, of their accustomed occupations and diversions and absolutely revolutionize their habits, would revolt and decline to accept a method of treatment involving so many, to them, apparently unnecessary sacrifices. It is always well, if at all practicable, to *secure the aid of some one directly interested in the patient and in close personal intercourse with him* to assist in carrying out the plan of treatment because, with even the most perfect original willingness on the part of the patient to follow the directions given him by the physician, there is always a tendency to lapse from pursuing the full details of the treatment. The physician must himself be ever ready to administer gentle reproof, or to give necessary encouragement to the patient.

The treatment of consumption, must be regarded both from the general and special standpoint. As regards the first, it is self-evident, that the improving of the nutrition is the great desideratum. A cure or overcoming of the disease is only to be obtained by so strengthening the system and its component organs, tissues and cells, as to enable them to destroy or imprison the objected-to invaders, at the same time that the poisons produced by the latter are freely eliminated.

What are the *best means of obtaining a proper condition of nutrition*? This is in reality a physiological problem. In as much as we ordinarily find that the digestive organs are not perfectly performing their functions in cases of this disease, our first attention must be directed to the improvement of their action. This is best

effected by administering at first only such diet as is likely to be promptly and easily digested; both the quality and quantity appropriate are to be determined by actual observation in each case. If the digestive functions be very much below par, at first it would be well to give only foods that have been partially digested. As the patient improves, we may add to the amount and number of articles given. As a rule, milk affords the best basis of dietary in this disease. It is ordinarily easily digested, more particularly when one is careful to administer with it some amount of cereal or farinaceous food. Milk should be given several times daily. We may also give as a food substance, very nutritious, and perhaps as easily digested as milk, eggs, which may be administered either raw or slightly cooked, or mixed with milk and a little whiskey in the form of egg-nog. Meat, either beef or mutton, is a useful and important article of food, containing, as we well know, a great deal of nutriment, though not so easily digested as the articles before mentioned; still if the patient's digestion be fairly good, we may allow him to eat freely of meat at one meal daily. In this connection, it may be said that probably the best arrangement of dietary, would be to give the patient one full meal daily, consisting of meat, bread, vegetables and fruit with perhaps a little wine. This meal may be taken properly either at about noon or three or four hours later.

Shortly after awakening in the morning and cleaning the mouth, and while still in bed, a pint of warm milk may be taken. Two hours later a pint of milk with two eggs, either mixed with it or taken separately, may be given. If the dinner be not taken at noon, again about that hour a pint of warm milk may be given. In the late afternoon again a pint of milk with two eggs may be given, and another equal portion preferably warm about an early bed time. Ripe fruit may be taken at the patient's pleasure at any time he desires it, and pecans, English walnuts, filberts, peanuts and almonds may be allowed. Of course, one must watch the effect of a diet of this character upon the patient, reducing the quantity or altering the intervals of taking nourishment, if it seem beyond his digestive power.

At times it becomes necessary, especially at the beginning of the treatment, to wash out the stomach of the patient once daily. This lavage is perhaps best done at about the hour for the patient's retiring, so that the stomach is left

clean and ready to receive under the best conditions the early morning portion of food. If the lavage seems indicated, it scarcely need be continued more than one to two weeks, for where it is a remedy of value, it always produces its full effects in that time. Now and then, the use of digestive ferments is desirable.

One of the most important elements in the general treatment of consumption consists in getting the patient to live in the open air. On account of the erroneous idea so commonly existing as to the origin of phthisis and the danger of taking cold, many are deterred from obtaining advantage of an agency which is most readily procured and at the same time most valuable to them. It is necessary that we enter into details as regards the patient's living in the open air. Of course, when the weather is warm, it would be easy to induce him to live out of doors, certainly during the greater part of the day; but even when it be cool or cold, the same procedure should be insisted upon. Protection from chilliness can easily be obtained by the wearing of sufficient warm clothing, and inasmuch as the patient should take as a rule but moderate exercise, it would be desirable when out of doors in very cold weather that he should be seated in some sunny locality, his feet well protected by warm shoes (or even rubbers if the weather be damp, and have suitable robes wrapped around him. Thus he may sit in the open air, even in the coldest weather, for hours, without being at all uncomfortable. Riding and driving if easily practicable are, of course, in most of instances desirable, although the inhalation of dust so often encountered when taking either of these forms of exercise, may prove a slight disadvantage.

Inasmuch as sitting in one locality may become irksome to the patient, it is advisable that, if the means of reaching parks or woods be easy, he should vary from time to time the place in which he takes his air.

When in his own home, he should not remain in close rooms. The apartment in which he lives must be thoroughly ventilated. He should sleep with the windows wide open. Inasmuch as in cold weather he might suffer from chilliness, a large number of light blankets should be provided as bed covering; and when one is unusually susceptible to head colds, a woolen or silk night-cap may be used. It is desirable to dress and change clothing in a room moderately heated.

In relation to exercise, only so much should be taken as will cause neither fatigue nor appear to draw too greatly upon the strength. Many false ideas are entertained as to the advantage of a great amount of exercise. Inasmuch as our object is to build up the nutrition of the body, it is necessary not to draw too heavily upon the slowly accumulating capital. Under certain conditions, we may have to insist upon a patient's taking absolute rest; as for instance, when there is presented evidence of acute inflammation in the lung, or when there is high fever, or blood spitting. These symptoms having disappeared, he may be gradually allowed to take more and more exercise.

As to baths, a tepid bath twice a week or oftener is certainly a necessity for personal cleanliness; but, beyond that, in subjects not exhausted by the disease, great benefit is frequently derived from the use of cold water. It is employed daily either as a spray, a needle bath, or sponge bath. This application of cold water, should be followed by friction with a Turkish towel or flesh brush. This stimulates greatly the peripheral circulation and thus conduces to general nutrition.

It would scarcely be allowable to pass over this subject of the general treatment of consumption, without some allusion to *serum therapy*. For many years now, in fact ever since the discovery of the bacillus tuberculosis, the hope has been entertained that some means of destroying the germ of consumption in the living body, and thus curing the disease, might be found in some product of the germ itself. By various procedures, serums and extracts directly or indirectly obtained, or modified, have been elaborated and experimented with. Notwithstanding the enthusiasm displayed by many of those who have originated or used them, it still seems to be the consensus of opinion that up to this time serum therapy has added little or nothing of value in the treatment of pulmonary tuberculosis.

We should mention also the use of *Finsen or Ultra-violet rays as a treatment of this disease*, which certainly seems to have been attended with extremely beneficial results. Several cases treated in this city by that means, have apparently gotten rid of the existence of the bacilli tuberculosis, at the same time that there has been a marked improvement of the general health of the patient, and the disappearance of symptoms that belong to consumption.

In this connection, the *Russell Treatment of Consumption by Emulsion of Fats* merits some attention. This treatment elaborated some years since by Dr. Russell, of New York City, is really founded upon the idea of increasing the nutrition of the body by administering to the patient an emulsion composed of several animal and vegetable fats. But it must be borne in mind, that Dr. Russell has insisted that all patients subjecting themselves to him for treatment should promise to carry out to the very best of their ability certain instructions as to their mode of living, which he properly esteems as of great importance.

These patients are taught to sleep with their windows wide open, to eat all that they can at each meal, to take daily a stated quantity of milk and eggs. The value and importance of cathartics is impressed upon them. They are taught to avoid over clothing, to keep their feet dry and warm, to obtain nine hours sleep at night when possible, and to avoid places of amusement. All unnecessary exercise is forbidden.

The beginning dose of the emulsion is half an ounce gradually increased until from two to four ounces are taken each morning and evening.

Castor oil is the main cathartic used. It is taken at first three times each week until the patient gets the full dose of emulsion and general diet, when a dose is taken each day.

The results reported in gaining of flesh and strength, as well as the disappearance of the bacilli tuberculosis from the sputum of these patients, indicates that the conjoint treatment seems to be frequently curative.

Certain drugs have at times been regarded as well nigh specifics of this disease. Among them there are certainly some of great value. They belong to various classes of therapeutic agents, some being probably alteratives, some really foods, others germicides and some nerve tonics. *Codliver oil*, perhaps for a longer period than any other one medicinal substance held sway as a *sine qua non* in the treatment of consumption. Undoubtedly when the digestive organs were capable of assimilating it, it has proved of great value, but in a great many cases it not only has not been beneficial, but has caused injury by disordering the digestion. Derived from codliver oil, *gadul* and *morrhual* have been used, but they seem to have been of very much less efficacy, than the substance from which they are derived. *Creosote* and *guaiacol* which are closely related chemically and thera-

peutically, have really proven of great benefit in many cases, more particularly when their use has been begun in the early stages of the disease, and when the dosage has been carefully prescribed. In administering these drugs, we should commence with small doses and increase them most cautiously, withholding them entirely or diminishing the dose, if in the slightest degree they appear to disagree with the stomach. *Guaiacol* or *creosote* may, either one, best be administered in capsule which should be taken immediately after meals and be followed by a fair amount of liquid.

Of nerve tonics, the *hypophosphites of lime and sodium* either in simple solution or in combination with some other medicaments have been much prescribed. It is probable that where consumption has followed upon excess or dissipation, these drugs are often beneficial. The *glycerophosphates*, probably, are even more effective as renovators of an exhausted nervous system than are the *hypophosphites*.

Palliative Treatment. As stated earlier in this paper, many cases present themselves to us in which we judge that a cure is not obtainable; here we simply have to render the path of the patient to the grave as little painful as possible. It is only humane that those whom we consider irrecoverably ill with this disease, while they themselves feel sure of getting well, should not be told of the gravity of their condition unless they earnestly request that we should tell them the absolute truth, about it. The above course being pursued, many a consumptive unable to recover, may be conducted with little unhappiness through a period that would otherwise be filled with apprehension and anxiety.

Fever exists to a greater or less extent in most cases of consumption and in all of those far advanced, to a high degree at some time or all of each day. Its relief is not always obtainable, except by means which are decidedly depressing. Inasmuch as this fever is mainly due to the injurious effect of the strepto-cocci or staphylococci always present in this trouble, an anti-streptococcic serum, has been hypodermically employed with gratifying results. While not at all destroying the bacilli tuberculosis, it often lessens the amount of other germs existing in the diseased tissues and found in the sputum, but better still diminishes the fever and the sweat. Where the degree of fever is very high, and the prejudice of patients and friends can be overcome, cold sponging will afford relief.

Profuse sweating, more especially at night,

is an annoying symptom met with in most advanced cases of consumption. The remedies which have proved of the greatest value in controlling it are atropia, aromatic sulphuric acid, and agaracin. In addition, daily sponging with a solution of alum is beneficial.

Cough, which is perhaps the most distressing symptom of this disease is best allayed by the administration of codeine in fairly large doses, two, three or four times daily. It is best to administer a full dose of this drug, or any of its class which may be preferred, about the time of the patient's retiring; because it is most frequently at nights that the greatest distress from this source is experienced. Not infrequently the cough is dependent more directly upon the condition of the larynx, and where tubercular disease of this tube exists there is frequently conjoined with it a disagreeable hoarseness and considerable pain upon swallowing. To remedy these distressing symptoms recourse has been had to various kinds of local medication. Probably spraying or nebulization of sedative or slightly stimulant drugs, dissolved in neutral oils, have given more relief than anything else.

Diarrhea, not an infrequent concomitant of pulmonary tuberculosis, is treated best by great care as to diet, by the insurance of thorough gastric digestion, and when those simple measures prove inadequate, by the administering of bismuth or tannin derivatives, with or without opium.

Hemorrhage from the lungs is one of the most serious complications of this disease, and is best treated by placing the patient in a semi-recumbent posture, and insisting upon absolute quietude of body, the interdiction of speaking and the taking of only small amounts of food for some hours. The extremities should be kept warm. The hypodermic administration of morphia, if the patient be much perturbed and the bleeding very free, is indicated. The use of solution of adrenalin chloride per orem and also hypodermically in rather large doses, frequently repeated (say 20 minims every hour) has been highly extolled.

Where the pulse is hard and full, aconite may be employed. If the hemorrhage be very great and the patient's pulse becomes very small, *hypodermoclysis* of normal saline solution should be resorted to.

The scope of this subject is so wide that volumes of considerable size have been written upon pulmonary tuberculosis and its manage-

ment. While all the topics connected with it are worthy of careful and extended consideration, I trust that I have in this short paper at least sufficiently outlined the home treatment of consumption.

500 East Grace street.

THE COUNTRY SURGEON'S REPORT OF THREE CASES.

By LUCIEN LOFTON, A. B., Ph. G., M. D., Belfield, Va.,

Ex-President Seaboard Medical Association of Virginia and North Carolina; Secretary of Southside Medical Association, etc.

The question arises daily—shall the so-called country doctor attempt big surgery, or as some of our "big gun" confreres term it, major surgery? I say, if you are capable, even in your own mind, try it. Help is always handy, and it is an indifferent man, indeed, who cannot improvise measures to meet the just demands of his case. The time is not far distant, when the weird and ready brother of the forest will wield the influence he deserves, and be recognized as the genuine backbone of the medical profession.

The best man in the business to-day was once the rugged, wholesouled, happy charitable and brave knight of the sulky and midnight lantern.

The country practitioner is the true specialist, loving with equal favor and practising with equal delight, each and every branch of our sacred calling—with the scientific touch *sui generis*.

Then here is to this nobleman, the proud creation of a guided destiny, a soul warped with the goodness of a divine hand. May his burden grow lighter, his mind grow brighter, his head never grow white, yet may he always be a godly man!

Now, gentlemen, I wish to ask your kind obeisance in reporting a trio of cases of surgery, and trust, without your goodness of heart, you will bear with me, but yet a little while.

In the first instance the city surgeon has all the elements of germdom to fight, scarcely mentioning the vitiated atmosphere, from which all manner of contagion may spring, while upon the other hand, the country surgeon abounds in wholesome air plus the germ element.

Then again, our city confrere is nicely sit-

*Read before the Southside Virginia Medical Association, Waverly, Va., December 1, 1903.

uated in so far as hospitals and the facilities found in all modern medical institutions. Yet upon the whole, the ratio of mortality under equal conditions is decidedly less in the country than in the cities.

The country surgeon has to root hog or die, while the city man recognizes his patients in the majority of instances simply as a number and you get so much routine and nothing more. This, gentlemen, is not by way of condemnation, but you who have served as internes know I may deviate only fractionally from the real status of affairs.

Mark you, we of the wool chapeau and broad-cloth jeans, know we have got to do our best in *every* case, for is it not a positive fact that 90 per cent. of the lay people, in any community becomes intimately acquainted in some way with all who are sick or injured whereby to criticize, condemn, compare or commend your work in toto? This is no idle paraphrase. You successfully plug the ingresses of your patient's chamber and the result will be felt by this one and that one, throwing large clusters of compliments and shekels to your patron saint—the medical man, who is more lenient.

But I fear I digress, gentlemen, so I will briefly outline some nice surgical experience the reader has had lately:

Case I., was Mr. W. H. Kunes, Emporia, Va., white, age 49. A well developed subject mentally and physically, without family history of moment. This patient, who owns a half interest in a saw mill, at Lumberton, Va., while attempting to cut some slabs with a 22-inch swinging cut-off saw, at 10 o'clock A. M., on October 30th of this year, had successfully worked at this machine for about fifteen minutes, but fearing his time was being wasted by slow movement, he attempted to hasten his efforts by showing the saw backward rapidly, when one of the adjusting weights unfortunately became tangled which left the saw free to rebound, which it did, with a velocity of about eleven hundred revolutions per minute. As the saw was pushed back Mr. Kunes stooped to place another slab in position, when the saw with full speed attacked his left thigh, about four inches below the great ischio sciatic foramen, plunging its teeth for a distance of eleven inches from the point of insertion on the outside of the thigh to a point about five inches above the knee joint. The muscular structure was minced and torn almost beyond recognition the entire distance,

while femur was gnawed to a depth of about one-eighth of an inch. It might be stated that at the point of attack from some unknown cause, the saw appears to have ricocheted inward and upward, and missed the femoral artery about one inch, a most fortunate provision for the patient.

Even as it was, Mr. Kunes was eight miles from the nearest physician. Realizing his great danger his first impulse was to stop the profuse hemorrhage by digital pressure. This proving a failure he improvised a couple of Spanish windlasses out of a red bandanna handkerchief, one midway the cut, and the other at the upper portion. This in a measure stopped the venous circulation. After carefully reviewing his critical condition, he asked for a rope, and a five-eight-cotton well rope was cut off a windlass from a nearby well. Mr. Kunes assisted in placing this above the cut and by repeated twisting tightening process relieved the arterial flow. This tourniquet remained around the man's thigh from 10:15 A. M. until 3:30 P. M., or five hours and fifteen minutes. Now, gentlemen, you can readily understand this man's torture. About this time Drs. Slade and Crawford arrived and placed over the wound a temporary dressing.

After securing surgical cleanliness, at eight o'clock P. M., I began operating on the patient with the able assistance of Drs. Geo. B. Wood and E. M. Parker, both of Emporia. At 9:40 the final attention to the wound was completed. The patient rapidly reacted from the chloroform anæsthesia which had been so successfully administered by my kind assistant.

In many respects this case presents many interesting aspects. Notably the suppressed circulation, the exposure to infection, the shock and the splendid after effects, relative to resolution.

I might add that I removed a four-inch vick of his fleece-lined drawer leg, besides some bone dust, besides blood clots galore, and fragments of muscle and muscle sheaths.

Each muscle was approximated anteriorly and posteriorly as was its sheath by No. 2 gut being careful in every stitch to get a firm hold, fearing by retraction or accident the ends might become separated. I also approximated the long pudendal nerve by making a noose in the distal end and piercing it by its fellow above through which I made the transverse suture. Although about 69 sutures were employed in the repair work, half that amount completed the

dermal suturing, which was made with No. 0 sterilized silk braid. The wound healed by primary union from within outward, and on the ninth day the patient was out of the bed. On the morning of the twenty-first day he boarded the train and paid a visit to his mill at Lumberton.

Too much credit cannot be extended Mr. Kunes for his great forbearance and genuine grit. I believe without such a vitality and nerve my patient would to-day be flat of his back and March would have found him on his crutches. As it is he will walk, in my judgment, without any assistance, by the new year.

Altogether Mr. Kunes has had fourteen different accidents, and this is his third experience on crutches.

Case II is Mr. Horace Moose, white, age 42, Emporia, Va., foreman Emporia Manufacturing Co., Belfield, Va., without any family history of event, or any previous personal history worth noting.

To-day six weeks ago, Mr. Moose had the misfortune to be struck in the left eye by four particles of steel, which while hammering upon a circular saw, flaked off and pierced the anterior chamber. The immediate pain was intense. He was brought home, where I saw him about one hour after the accident and examined the wounded organ under a lamp light. No external spiculæ of steel or iron were to be seen under a high power glass, nor did I perceive anything after repeated examinations with the ophthalmoscope. Not locating any foreign particles and the absence of pain, but noticing two cuts upon the corneal conjunctival surfaces, I concluded, as did the patient, that he had suffered a glancing blow, and most likely the fragments had been dislodged by rubbing the lid and of its own volition.

I ordered absolute rest in a darkened room with hot fomentations every five minutes, and directed that several drops of a 2 per cent. solution of eucaïn be instilled in the eye if it became painful. I left him within an hour, but before doing so, I placed in the eye two drops of a 1 per cent. solution of atropia.

Next morning the patient complained of a throbbing sensation within the "eye ball," as he put it. By thoroughly eucaïnizing the mucous surfaces I noticed and removed a fragment of iron scale. Same treatment during the day.

The second night about twelve o'clock a sharp lancinating pain woke him much startled, at

which time he removed two additional pieces of steel or iron. On the seventh day I noticed some small cloudiness of the lens. The atropia was pushed by dropping two drops every three hours until physiological effect was noted. No improvement unless on the eighth day pain was practically nil; but lens became more clouded and with it went his vision.

A few days later I had the orb skiagraphed without result. Fifteenth day, at the inner side and near its meridian I secured another flake of steel. About same treatment has been kept up all along with addition of leeches and cantharidal blister, ice pack, etc., together with succus cineraria martima, a preparation recommended for cataractal absorption, which has really closed up the lens to the extent that fingers, faces and other things can be readily distinguished from 3 inches to 25 feet distant. If the lens does not completely clear up under this treatment after being used 2 or 3 months, I will proceed to do repeated needlings, provided it remains gelatinous; otherwise if it becomes senile, I shall advise total extirpation, followed by correcting artificial lens.

The eye at this time occasionally pains him, yet there is no tenderness of the orb per se, nor any extra ecchymosis existing.

Case III. James Pitts, colored, age 27, Belfield, Va.: Family history and previous history augascherspeilt.

Pitts suffered a compound comminuted complicated fracture of both bones of the leg at about the middle third by being run over by a passenger train in Belfield. Patient was brought to my office, from whence he was taken home and immediately prepared for amputation.

Dr. John B. Jones, of Emporia, assisted by giving the anæsthetic.

The bones were parted at the upper third, which left him a good knee pad for an artificial leg. Wound healed by first intention and in fourteen days the patient was upon sticks.

I fear I have already abused the generous and certainly a forbearing hearing, but in closing do me the kindness to discuss with all frankness the many imperfections of which you have heard a few.

Patient: Do you believe in value of fresh air?
 Physician: I do, indeed. I spent a week in the mountains, and it cost me \$200.

REMARKS ON APPENDICITIS.*

By JACOB MICHAUX, M. D., Richmond, Va.,

Professor of Obstetrics, University College of Medicine, etc.

In this paper it is not intended to discuss the subject *in extenso*; but to call attention to some features of interest, at least to the writer.

In the first place, then, it would seem to be a mistake, to judge from a number of cases that have occurred in this city within the last few years to wait for a full development of the symptoms before advising resort to surgery. In support of this proposition it may be urged with force that a considerable number suffer from perforation, nay, even sloughing, in the early days of the onset, thus entailing risks far greater than those incurred in early, clean operations. It must be confessed by all surgeons that this result is liable to follow in a considerable percentage of cases. The argument in favor of early operation is that, as hinted above, clean, thorough work may be accomplished; that therefore the incision may be closed and that, finally, the risks of adhesions and herniæ, by reason of the absence of drainage apparatus may be reduced to a minimum.

In the foregoing remarks it is not intended to pass over without notice inoperable cases, such, for example, as are complicated with morbid conditions of the stomach, kidneys, heart or liver, or debility from disease or age. These cases must be dealt with by the surgeon in a most conservative manner and call forth the exercise of calm, cool judgment in deciding as to the propriety of resorting to operative measures. In this class of cases experience has shown the wisdom of adhering to the expectant plan and treating them medically.

Another branch of the subject has received less attention than its importance demands, namely, the location and character of the incision. In the numerous cases, especially in females, in which diseases of the pelvic organs are suspected or known to exist, the writer has for some time adopted the plan of making the incision *internal* to the course of the epigastric artery and a little nearer the brim of the pelvis in order that inspection, and if necessary, removal of these organs may be accomplished through the same incision and at the same sitting.

The method of parting the muscular fibres, introduced some time ago by Dr. McBurney, of

New York City, I believe, is one that commends itself in the strongest manner. It consists in *drawing apart the muscular fibres* of the several muscles through which it is necessary to pass, *without cutting them*, by means of retractors. The ease with which this is accomplished; the fact that it requires no more time and the further fact that it affords a means of making so strong and perfect a closure of the incision that hernia is almost impossible, sufficiently sustains the assertion made above. The peritoneum is closed with catgut; the muscles by a few interrupted catgut or silk sutures, and the skin and subjacent tissues with silkworm gut or silk which, of course, are to be removed at the proper time.

In several cases operated upon in the manner above described during the past summer the results have been thus far all that could be desired. Dr. McBurney deserves the highest praise for introducing this method of entering the abdomen which does not seem to have been, as yet, adopted sufficiently generally.

323 E. Franklin St.

SOME REMARKS ON THE DIFFERENT DRUGS USED IN THE IRRIGATION TREATMENT OF GONORRHEA.

By THOMAS W. MURRELL, M. D., Richmond, Va.,

Assistant to Chair of Genito-urinary Diseases and Lecturer on Dermatology, University College of Medicine.

Every now and then some new chemical or chemical combination is put before the profession as the long looked for specific in the treatment of gonorrhea. Accompanying the announcement, the doctor's office is flooded with pseudo-ethical literature purporting to be tests of the vaunted article.

As a rule, these articles are the work of medical scapegoats and the waste basket is the best receptacle for such stuff, but every now and then a good serviceable article does come under such a guise. Therefore to entirely neglect these announcements, is not the best policy, but to lend them a ready ear is a far worse one.

The drugs that are most used in the external treatment of gonorrhea are the bichloride of mercury, potassium permanganate, nitrate of silver, and the different preparations of silver, such as protargol argurol, etc.

*Read by title at the meeting of Medical Society of Virginia, Roanoke, Va., September 15-17, 1903.

Nitrate of silver is seldom used in gonorrheal therapy nowadays except in two conditions:—First in the abortive treatment, and second in posterior urethritis as a deep instillation; but while efficient, it is very severe in its action and its caustic effect may be decidedly harmful. The pain it produces is agonizing and when once used it is difficult to get a patient who will submit to its being tried a second time.

Bichloride of mercury is as efficacious and is less painful than nitrate of silver, but this is not saying very much because here also the pain is intense and aching. This aching seems to be characteristic and the pain lasts from three to four hours after the irrigation: but it is thoroughly reliable. The idea that it—by forming an albuminate with the epithelial cells—is thereby prevented from reaching the deeper cells is to an extent true. But who expects to cure gonorrhea at one sitting? The theory presented, however, would seem to be built on that supposition. As this albuminate is ready and quickly cast off—the deeper cells push themselves forward and bring the gonococcus within reach of the germicidal agent.

Potassium Permanganate is found to be less efficacious but a great deal less painful than the bichloride of mercury. It will be noticed that my progression is along the line of lessened pain, and this is too important to be overlooked as long as efficacy is not too greatly sacrificed. There are some doctors whose personal magnetism will induce patients to stand great suffering, but there are also many others to whom the giving of intense pain may mean a lost patient; therefore this quality must be reckoned with.

When we come to the next class—the silver preparations—while we gain tremendously in lessened pain, we lose in efficacy and for this reason they cannot supplant those drugs just mentioned, particularly the permanganate of potash.

But there is one condition in which the silver preparations seem to be especially serviceable and it is this:—There usually comes a stage in the treatment of gonorrhea when you are figuratively speaking, “between the devil and the deep blue sea.” If you leave off the irrigations too soon, you have to meet the possibility presented of not sufficiently cleaning out the cause of the disease and a gleet discharge defies you. On the other hand, continuous irrigations may not only kill all the gonococci, but set up a low grade of urethral inflammation which may leave

a discharge in every way to the eye resembling gleet.

The silver preparations fill in this gap very nicely. Their effect is more healing to the tissues than otherwise and yet their germicidal action is sufficient to put the quietus on any gonococci straggling around in search of a *locum minoris resistentæ*. But as a primary measure their efficacy is not as great as that of the permanganate of potash. One fact will be observed in the use of these drugs, namely, that the urethral cells seem, after a time, to become used to the solution at all constantly employed, and a change will effect very happy results.

To illustrate this I will cite three recent cases, the drugs used being Potassium Permanganate, Bichloride of Mercury and *Argyrol*.

This last (*Argyrol*) is a silver vitellin containing thirty per cent. of soluble silver and is decidedly the best of this class of drugs.

Case I.—White male aet. 26 years. This young man came under treatment at the commencement of a primary case. Microscopical examination showed the gonococci present and he was put on the alkalies and compound gaultheria capsules (Wheat) until the acute inflammatory stage was over. Then permanganate of potash irrigations were instituted, of strength varying from 1-3000 to 1-1000; at the end of fifteen days there still remained a slight intractable discharge and I decided to change to the bichloride of mercury at 1-12,000 percentage. Three irrigations effected a complete cure, no gonococci being found on examination.

Case II.—White man aet. 46 years. He stated he had had gonorrhea as a regular guest with slight intermissions since his sixteenth year. He presented himself to me suffering with all the symptoms of chronic posterior urethritis.

Strong permanganate solutions were used but seemed to effect only slight improvement—a second microscopic examination showing as many gonococci as when he came under treatment, and decidedly more urethral inflammation. Accordingly I changed treatment to irrigations with argyrol solutions, at three per cent. and deep instillation at six per cent., with a Keyes' deep urethral syringe.

Accompanying this treatment I daily massaged the vesicles and prostate. In twelve days he was discharged as cured.

Case III.—Colored man aet. 22 years, with chronic gonorrhea. I put him on the use of

irrigation with argyrol solutions, with deep instillations of the same. In one week's time, improvement was too slight to justify continuation. I then changed the plan of treatment to irrigations with permanganate of potash solutions with immediate good results. Though this case is still under observation he will soon be discharged unless something unexpected occurs.

Many cases, of course, will yield to steady applications of a single drug; but with stubborn cases this procedure of changing the therapeutic agent will be followed very generally by the most beneficial results.

One great quality to be coveted by the young physician is not the ability of progression towards newer things, for that is a natural tendency of the growing mind but that quality which enables one to see through fallacies and false beliefs, the intuition that enables the older man to reject the worthless however nicely presented and to cling to tried methods until a better thing presents itself.

This faculty is inherent in some men and with others gained by experience, but in no field is it more useful than in the choice of drugs used in the treatment of gonorrhea.

621 *E. Franklin St.*

ESCAPE OF AMNIOTIC FLUID WITH CONTINUED VIABILITY OF FETUS.

By J. H. WINFREY, M. D., Glen Allen, Va.

I was consulted some time during the latter part of March by Mr. F., who said that his wife, about the middle of January, had been taken with pains in her hips, followed in a few minutes by a great gush of fluid from her womb, enough to wet her clothing and bed. There was no blood, the water was almost clear, and the pains passed off after the escape of the fluid, leaving the patient as well as usual except for weakness.

About four weeks later she had the same experience, and again in two weeks, and at the time he consulted me it was recurring every few days.

I declined to prescribe without first seeing and examining the patient. This she refused until April 4th, when I was sent for. She said

that her menses were on and that she was suffering from pains in the abdomen, back and hips. The hemorrhage, which was small, had been going on for two days.

Upon external examination, I found the womb and abdominal muscles tightly contracted over the fetus which felt very bony and full of projections, and held as if in a vice. There was no fluid in the womb, consequently the fetus could not be moved in any direction. The abdominal walls were so thin and the fetus so plainly discernable that I feared for a time that I had a case of ectopic pregnancy. Digital examination showed a soft, patulous os. A finger could be passed in, but came in contact with some thick, vascular membrane. One side of the os was thin, the other very thick and spongy. I ordered for her perfect rest in bed and a light diet.

On my return next day, I found all bleeding had stopped, pains gone, and the cervix and os more normal. I kept her in bed for a few days, and she seemed to be all right with the exception of the absence of the amniotic fluid.

I forgot to state that she gave a history of good previous health, no hereditary taints, age 32, mother of three children, previous pregnancies and labors normal. She had had no accident or injury. She did not know when she became pregnant, as she had menstruated more or less regularly all along, and the escape of fluid took place at what would have been her regular menstrual period. The womb would gradually fill up again after one of these discharges, until it reached a certain size, when there would be another overflow.

On April 23rd I was sent for again, and found her having hard labor pains. The labor was normal except that it was a breech presentation, and lasted about ten hours. She was delivered of a male child, apparently about an eight months development and very much emaciated. The left leg had been fractured in its upper third, and had united again in a very crooked manner. The fetus was otherwise well formed, but dead, though the mother said she had distinctly felt it move that morning. The placenta was retained and adherent to the fundus. The membranes were very thick and vascular. The patient made an uninterrupted recovery.

This may not be interesting to you, but it was to me as I could not find in my library any description of a similar case, and I cannot now

assign any reason for the escape of that fluid, nor any reason why the fetus was not expelled earlier, nor how it continued to live in that cramped condition.

Perhaps some reader can offer an explanation, and tell me what was the proper course for me to follow under the circumstances.

Correspondence.

Occupation in Fish Factories in Tide-Water Virginia Curative of Tuberculosis of the Lungs.

URBANNA, *Middlesex Co., Va.*

Mr. Editor:—There is a matter which has come to my knowledge in various ways for some years past that I think is of too much importance, both to the profession and to the public, not to be made known as widely as possible. It is no less a fact than that we have right here in Tide-Water Virginia a number of places where tuberculosis (consumption in almost every form) has been and can be cured—not simply improved, but *cured*—without medicine, or with a minimum quantity of medicine at first. These places are known as “fish factories” or “guano factories.” The Manhaden fish (or moss bunkers)—fish related to the shad—are caught in the Chesapeake Bay or the Atlantic Ocean, and brought to these factories in great quantities, and manufactured into fertilizers of high grade. The oil is carefully compressed from them and shipped to the large cities where I have, no doubt, it is manipulated and sent out as the best cod liver oil.

I shall not at this time venture to state my theory as to how a stay in one of these factories cures the diseased lungs of a consumptive; but I am so well satisfied of the fact that such a stay *does cure tuberculosis of the lungs*, etc., that I want others to know it.

Right in this room where I am now writing I had a promising young man who had to leave a profitable position as clerk in a store of general merchandise and come home with pronounced symptoms and signs of incipient phthisis pulmonatis. His father died of consumption five years ago. His grandfather and grandmother on his father's side both died of consumption.

Several of his aunts and uncles also died from the same disease.

This young man came home, pale, weak, with a dreadful cough, and had had several hemorrhages. He had no appetite; with very feeble power of digestion of ordinary food when persuaded to take it.

Having heard of such marvellous improvements and cures of consumptive people who had worked in these factories, I applied to a large hearted gentleman who had married a distant relative of mine, and who was the head of a large concern of this kind, to take this young man in his factory without wages. He did so, and assigned him at first to very light duty. The young man, like every one else who had undertaken such work for the first two or three days thought that he could not stand it; but after these two or three days, he found out that it was all right. He began to eat, and eat enormously in a short time, with a thorough toning up of his digestive powers. In a week or so, his cough had greatly lessened, and he had no more pains in his chest. In two weeks, he had gained nine pounds in weight; cough had disappeared and his strength was quadrupled. He remained there only six weeks, and then went home so vastly improved that everybody wondered. He will return to the factory in the early summer when the fish business commences again. In the meantime, he has resumed his former business as a merchant's clerk.

This case is but a repetition of the record of many that I have authoritatively heard of. I am collecting facts and statistics which I will compile and publish if those that ought to be interested wish to hear more on this subject.

WM. S. CHRISTIAN, M. D.

December 9, 1903.

New Orleans Polyclinic.—Seventeenth annual session opens November 2, 1903, and closes May 28, 1904. Physicians will find the Polyclinic an excellent means for posting themselves upon modern progress in all branches of medicine and surgery. The specialties are fully taught, including laboratory work. For further information, address, New Orleans Polyclinic, Post-office Box 797, New Orleans, La.

Analyses, Selections, Etc.

Spotted (or Tick) Fever of the Rocky Mountains—A New Disease.

Passed Assistant Surgeon of U. S. Public Health and Marine Hospital Service, John F. Anderson, under instructions April 24, 1903, proceeded to Montana to investigate the so-called "spotted fever" which has prevailed at times in the Bitter Root Valley of Montana, and also in Nevada, Idaho and some parts of Wyoming. A mild form of the disease has been reported in Eastern Oregon. The disease first attracted professional attention in Western Montana in 1885. The subject is fully treated in *Bulletin* 14 of the Hygienic Laboratory, Washington, D. C.

Drs. Wilson and Chowning, of the University of Minnesota, 1902, discovered a parasite in the blood—ovoid intra-corpuscular bodies with amoeboid movements—which is very probably the cause of spotted (or tick) fever. Unlike most malarial parasites, the parasite of tick fever is not pigmented, but like them, it shows amoeboid movements—thus differing from the pyrosoma bigeminum, which is non pigmented and without motion. Another form of the spotted fever parasite is arranged in pairs in the red blood cells, resembling the double form of pyrosoma bigeminum. The parasite found in the red blood corpuscles of spotted (or tick) fever apparently lies between those of some forms of malaria and of Texas cattle fever. Two full page plates are included in the pamphlet of 50 pages which we presume can be obtained by those interested by application to the Director of the Hygienic Laboratory, M. J. Rosenau. It is the *Bulletin* for July, 1903. The description is fuller than our space will allow us to spare.

The disease does not prevail South of 40° or North of 47°. It prevails at an average elevation of about 3,000 to 4,000 feet above sea level, and exclusively in the spring and summer—the latest case observed being July 20.

All persons exposed to the bite of ticks, such as stockmen—especially sheep herders, miners, prospectors, lumbermen, ranchmen and those whose duties take them into the brush, are subject to the disease. As to age of persons, the youngest was 18 months, and the eldest 74 years old; but persons from 15 to 50 years of age more often contract the disease, as they are more ac-

tively engaged in outdoor work. Of 121 cases, 76 were males and 45 females—the difference being probably due to the greater exposures of men.

The ticks first appear in Bitter Root Valley about the last of February but are inactive until the middle of March or first of April. The ticks diminish rapidly in number from about June 1 until after the middle of July when they become very scarce and then disappear. Mosquitoes do not appear in the Valley until after the first cases of fever develop, and remain some time after the last cases of fever disappear. Bedbugs and other house insects were excluded, as two cases of the fever never occur the same year in the same house.

It was always found, however, in cases of spotted fever, that they had received tick bites usually about one week before the onset. The species of ticks that produce the disease are, probably, according to Dr. Ch. Wardell Stiles, Zoologist of Hygienic Laboratory at Washington, *dermacentor reticulatus*.

Incubation of the Fever. From 3 to 10 days—usually about 7. Chilly sensations, malaise and nausea occur for a few days after the bite. Then there is a distinct chill, and the person takes to bed, with some pain in the back and head, soreness of the muscles and bones, causing a sensation as if the limbs were in a vise; bowels constipated; heavy white coat on tongue, with red edge and tip; conjunctivæ congested, becoming yellowish; urine usually small in amount, with albumen and a few casts; slight bronchitis after a few days; nose bleed—sometimes quite severe—is always present.

Fever. Before the distinct chill there is little or no morning fever, with a slight afternoon rise. But after the chill, there is an abrupt rise, with evening exacerbations and morning remissions. The maximum is usually reached on the 8th to 12th day: then, in a favorable case, gradually falls, becoming normal about 14th to 18th day—and then usually subnormal for a few days. In fatal cases, the fever remains high—from 104° to 106°—morning remissions being very slight or not present.

Circulatory System. Pulse out of all proportion to the temperature—usually 110 to 140—a pulse of 120 being not unusual with a temperature of 102°. It is rather thready, though sometimes full and strong, and occasionally dirotic in the first week. Red blood counts show progressive decrease in red cells, but as

soon as temperature becomes normal an increase begins. While blood corpuscles are increased in number—varying from 8,000 to 12,000. The most interesting feature is an increase in the large mononuclears. There was a steady, but not very rapid, decrease in the percentage of hemoglobin—one case going as low as 50 per cent. The blood failed at all times to agglutinate bacillus typhosus. Fresh and stained blood showed the three forms of parasites described in the pamphlet under etiology, but which the limit of space with us forbids describing.

Eruption usually appears on third day—first on the wrists and ankles, then on arms, legs, forehead, back, chest and last and least on abdomen. Except the abdomen, other portions of the body in some cases, are literally covered. At first, the spots are bright red, macular at all times, and from pin point to split pea in size. At first, they disappear readily on pressure, and return quickly; but in a severe case they soon become darker, and sometimes almost purple. From about the 6th to 10th day of disease, they fail to disappear on pressure, and become distinctly petechial in character. In favorable cases, about 14th day, they begin to lose their petechial character, and disappear slowly on pressure. Some times, the eruption consists of small brownish spots, giving a turkey-egg appearance.

As the fever declines, the eruption begins to fade, but a slight return of fever or a free perspiration will cause it to show distinctly. Even in a case ten months recovered, a warm bath may cause the spots to show distinctly. The doctor has seen them in a case 24 days after discharge.

When convalescence is well advanced, desquamation extends over the entire body. In very severe cases, there may be gangrene of the fingers and toes, and still more frequently of the skin of the scrotum and penis. The skin is always jaundiced to a greater or less degree—usually first noticed in the conjunctivæ—the vessels of which are congested from the outset.

Digestive System. Tongue at first has a heavy whitish coat, with red edge and tip; later, the coat becomes dark brown, and teeth are covered with sordes. There may be little nausea at first, but the appetite is often good throughout. In fatal cases, the nausea is more persistent and lasts until the end. Constipation is pretty constant throughout. Tympanites is never excessive; gurgling in right iliac fossa occasionally. Liver usually moderately en-

larged. Spleen is early enlarged—and may extend one or two inches below the costal margin.

Urine is decreased to about one-half normal amount; small amount of albumin; granular, hyaline and epithelial casts.

Respiratory rate always increased—from 26 to 40 a minute—even in some cases to 60; regular, but often shallow. Always a slight bronchitis during the second week. Lobar pneumonia is a frequent complication in fatal cases. Epistaxis usual from end of first week.

Nervous system. Pain in head and back usually severe during first week. Soreness of muscles and bones often causes the patient to change position—trying to find a comfortable position. Muscular soreness is often very severe, even in mild cases, and lasts till recovery. Mind usually clear, even in severe cases, until a few hours of the end. Pupils react normally to light and distance. No opisthotonos or other irritative symptoms.

A number of illustrative cases are detailed.

Morbid Anatomy. Rigor mortis usually intense and appears early.

Skin. Jaundiced, sometimes deeply. Wounds apparently caused by tick are common. Skin has a marbled appearance. On non-dependant parts of the body, petechial spots—from bright red to dark purple in color, from 1 to 3 cm. in diameter—most abundant on wrists, ankles, arms and back. Capillaries congested. Minute extravasation in rete extend into the stratum mucosum.

Brain and spinal meninges normal except slight hypostatic congestion. No increase in fluid. Brain and spinal substance normal.

Pleura normal, without excess of fluid. *Lungs* show hypostatic congestion, occasionally pneumonia.

Pericardium normal. Few small petechial hemorrhages under epicardium over left ventricle constantly found. Heart muscle flabby, softened, pale. Right heart full of blood; left contracted and empty. Nuclei are faintly stained; fibers granular and fragmented.

Stomach normal, as also *intestines*. *Peyer's patches* rather pale. Mesenteric and retro-peritoneal glands not enlarged. *Spleen* usually dark purple, soft, diffuent, and 3 or 4 times its normal weight. Vessels engorged with blood. Many mononuclear leucocytes, containing from one to four red corpuscles; no free pigment; sections usually show advanced degree of fatty infiltra-

tion; bile capillaries full. Pancreas about twice normal size.

Kidneys enlarged; capsule usually non adherent. Small subcapsular hemorrhages on ventral surface. On section, congested and swollen cortex, pyramids well outlined, and deep red. Small hemorrhages in pelvis. Microscopically, minute extravasations of blood in cortex and under capsule; veins filled with blood. Nuclei of convoluted tubules stain poorly; cells granular and in some places detached; newly formed casts in tubules. Bladder normal, and usually with small amount of dark urine.

Prognosis. Mortality from 70 to 90 per cent. in Montana—death usually between 6th and 12th day. Amount of eruption apparently bears no relation to severity of disease. In Nevada and Idaho, the disease is not nearly so fatal. In these States, if the patient is transferred to the lower valleys where he can have proper care, the prognosis is, as a rule, very favorable. The disease is more malignant in some localities than in others, and in one year more than in another.

Diagnosis. If the patient gives a history of tick bites, occurring in an infected locality, with a chill, pain in head and back, muscular soreness, constipation, macular eruption, first on the wrists and ankles, appearing on the third day of illness, becoming petechial in character, there will not be much difficulty in diagnosing spotted (tick) fever. A blood examination, however, should be made in all suspicious cases, for the parasite (shown in Plate II of the *Bulletin* from which this description is compiled).

The five diseases which might cause some difficulty in differential diagnosis are:—Dengue, cerebro-spinal meningitis, peliosis rheumatica, typhoid fever, and typhus fever.

1. *Dengue* is a disease of tropical and sub-tropical countries, whereas spotted (tick) fever occurs at an elevation of from three to four thousand feet above sea level. The swollen joints, pleomorphic eruption over the joints—never petechial—apyretic period and short course of dengue would differentiate it from spotted fever.

2. *Cerebro-Spinal Meningitis.*—The stiffness of the neck muscles, photophobia, sensitiveness to sudden noises, headache and rigidity of the muscles of the back and neck, with the not altogether constant irregularly situated rash noted in this disease, should not cause much trouble in telling it from tick fever.

3. *Peliosis Rheumatica.*—The sore throat of this disease, the multiple arthritis with purpura and urticaria, and the comparative rarity of the disease offer a sufficiently distinct clinical picture to prevent its being mistaken for tick fever.

4. Clinically, *typhoid fever* and spotted (tick) fever closely resemble in some particulars. But the rose spots appearing first on the abdomen—papular in character—diarrhea, the Widal reaction, and the presence of the typhoid bacilli in cultures from the blood of typhoid fever, and the presence of parasites in the red blood cells of spotted fever, suffice to separate distinctly these two fevers.

5. *Typhus fever* and spotted (tick) fever closely resemble each other. Cases of typhus fever occurring in a locality where spotted (tick) fever prevails would, without blood examinations and close bedside observations, cause trouble in diagnosis.

In *typhus*, the incubation period is longer, no history of tick bites, eruption is first on abdomen and chest, is intensely contagious—especially prevalent in winter months—not limited to a short time in spring—and there are marked nervous symptoms. Two cases of *spotted* (or tick) fever have never been known to occur in the same family the same season, thus conclusively showing the non-contagious character of this latter disease.

Treatment:—After the discovery of the parasite in the blood as causative of tick fever, Dr. Anderson suggested the use of quinine in large doses, preferably hypodermatically. In five cases in which it was used systematically in large doses, results were most happy—all recovered. Five cases which did not have this treatment died. Give a gramme of quinine bismuriate hypodermically every six hours. If the needle is objectionable, give a gramme of the sulphate every four hours by the mouth, unless the irritable effect on the stomach prevents. Begin the use of quinine as soon as diagnosis is made and persist with it in decreasing doses as convalescence advances.

Some physicians speak well of calcium sulphide, and others of creosote.

Support the heart with strychnine, whisky or other appropriate cardiac stimulants.

For the severe head and back pains during the first week, Dover's powders or morphine may be used. Encourage the patient to drink large quantities of water to flush out the kidneys. Warm sponge baths or packs are useful and re-

freshing for the fever. After a bath, the spots lose their dark color and become much brighter. Keep the room dark and as free from noise as possible.

Milk, buttermilk, broths, soft eggs and soft toast may all be allowed. Whisky may be given as an egg-nog.

As soon as a person is bitten by a tick, the insect should be removed and the place cauterized with 95 per cent. carbolic acid. By applying ammonia, turpentine, kerosene or carbolized vaseline the tick can usually be removed or detached without trouble.

Thiol for Uterine Diseases, etc.

George Foy, M. D., F. R. C. S., Surgeon to Whitworth Hospital, Druncondra, Dublin, says (*Med. Press and Circular*, Dec. 2, 1903) that the value of ichthyol as a therapeutic agent is well known to gynecologists; but its unpleasant smell and its staining of linen, etc., were such drawbacks to its usefulness that gynecologists sought for a drug of similar medicinal properties, without the unpleasantness attending its use. After some experiments, Dr. Kolenko selected *thiol* (*Medicinskoie Obosranie*) prepared from gas oil by heating with sulphur. Thiol has been for some time in use as an internal remedy in gynecology, administered internally in pills; but Kolenko trusts to it more as a topical application in pelvic and uterine inflammations. He applies the liquid thiol to the interior of the womb in endometritis, and as an embrocation to the cutaneous surface. Applied to cervical and labial ulcers, and those of the womb, he has found its use to be followed by rapid cicatrization. He also employs suppositories of dry thiol and cocoanut oil and tampons. From an experience of a hundred cases treated with thiol, Kolenko considers that this drug is fully equal to ichthyol in the treatment of inflammatory affections of the pelvis and the womb, and as it possesses none of the undesirable properties of the latter, it should soon come into popular favor with gynecologists.

Increase of Insanity in the Negro, and Causes.

In the 33rd Annual Report of the Superintendent, Dr. Wm. F. Drewry, of the Central (Va.) State Hospital, for the fiscal year ended September 30, 1903,—which Hospital is exclusively for negroes, we find some interesting material. Not of least importance is the para-

graphs on "increase of insanity (among the negroes) and its causes," which we excerpt:—

A few observations on the increase and the causes of insanity in the negro may not be inappropriate. From the best available information insanity, and tuberculosis as well, was almost unknown among ante-bellum negroes. In 1860 only 25 insane negroes were in the State Asylum at Williamsburg. In February, 1870, when the State took control of the Howard's Grove Hospital, near Richmond, there were 123 insane negroes reported in the State. To-day there are reported 1,074. In 1860 the ratio of insane negroes to the general negro population was 1 to 7,000; in 1870, 1 to 3,000; in 1880, 1 to 1,950; in 1890, 1 to 940; in 1900, 1 to 640. Between 1870 and 1880, 495 first admission cases were received into the hospital, an average of 49 a year; during the next decade, the number was 1,100, a yearly average of 110; from 1890 to 1900, the number of first admissions reached 1,512, a yearly average of 125. From October 1, 1900, to October 1, 1903, 745, or an average of 248 a year, were received.

How can this increase of insanity in the negro during the past thirty-five years be accounted for? The increase, in my opinion, is a result as well as an indication of race degeneration. During slavery the negroes were usually under strict but kind discipline, and moral and regular habits were enforced; they lived in clean and hygienic surroundings, were well fed and nourished with wholesome food, were comfortably clothed, led systematic, regular lives, had no mental worries and anxieties, and no responsibilities, to speak of. In short, their habits, surroundings and every-day lives were all conducive to robust physical health and strength and mental contentment. With emancipation came unbridled appetites and passions, dissipation, excesses and vices, bad habits, violation of the laws of health, irregular living, indolence, privation, etc., and as a consequence, the negro soon began to lose vitality, his constitution became weaker, and hence he became a more ready prey to diseases such as insanity and consumption. Depraved and immoral habits have brought about more widespread venereal diseases to be transmitted to the third or fourth generation. The mental strain and responsibility incident to caring for himself have also been significant factors in the causation of insanity. Being of an emotional and impressionable temperament, the wear and tear of excesses and the pressure

of excitement have been too much for the negro. Formerly heredity was not a factor in the causation of insanity in the race, but now that predisposing cause has become one of considerable consequence.

Book Notices.

Anatomy—A Manual for Students and Practitioners. By HENRY E. HALE, A. M., M. D., Assistant Demonstrator of Anatomy, College of Physicians and Surgeons, Columbia University, in City of New York, etc. One of *The Medical Epitome Series*. Edited by V. C. PEDERSEN, A. M., M. D., Instructor in Surgery, etc., New York Polyclinic Medical School and Hospital. *Illustrated with 71 Engravings*. Lea Brothers & Co., Philadelphia and New York. 1903. Cloth. 12mo. Pp. 384. Price, \$1.

This is a first rate epitome of *Gray's Anatomy*—that book which has been called "the Bible of Medicine." The complete outline of human anatomy is given—every step being taken in natural sequence, so that the student gets a correct perspective of the entire subject. It is the book for preparation for State and Army Board examinations, etc., provided, of course, the student has gone thoroughly over the subject in the dissecting or lecture room with *Gray's Anatomy* as his text-book. A good help for such a purpose is the series of questions appended to each chapter. Well designed illustrations are used throughout the book where their help seemed essential or helpful.

Diseases of the Nose and Throat. By CHARLES HUNTOON KNIGHT, A. M., M. D., Professor of Laryngology, Cornell University Medical College, etc. 147 *Illustrations*. Philadelphia: P. Blakiston's Son & Co. 1903. Cloth. 8vo. Pp. 423. Price, \$3 net.

This book is practically an outline of the course of lectures at Cornell University by the author—with such additions or modifications as may improve the general purposes of a text-book. While the author recognizes that it is unsafe to give a final and positive answer to many questions constantly arising—as for instance, questions relating to the physiology of the larynx and the action of the vocal cords, etc.—he yet presents the subjects in a thoroughly up-to-date manner. For the practitioner in search of a good guide book, the one under consideration is

well adapted. Descriptions while concise are clearly given, symptoms and differential diagnosis are well set forth, and the lines of treatment for special conditions are practical—both as to the surgical and medical sides of the question. The print is clear, illustrations are aptly selected, and the index is helpful for ready reference to a point.

Manual of Hygiene and Sanitation. By SENECA EGBERT, A. M., M. D., Professor of Hygiene, and Dean of the Medico-Chirurgical College of Philadelphia, etc. *Third Edition, Enlarged and Thoroughly Revised. Illustrated with 86 Engravings*. Lea Brothers & Co., Philadelphia and New York. 1903. Cloth. 12mo. Pp. 467. Price, \$2.25 net.

The demand for this *Manual* has rapidly called for this Third Edition which has given the author the opportunity to add much valuable matter, and makes it even more desirable as a text book or as a work for reference by the practitioner. It is thoroughly practical, clear in every detail and contains an enormous amount of authoritative information. If an early revised edition should be called for, we hope to find reference to that masterly article by Dr. Paul B. Barringer, of the University of Virginia, read before the Medical Society of Virginia in Roanoke, September, 1903, on an "Unappreciated Source of Typhoid Infection," which is also to be published soon in the pages of this journal. In this paper, Dr. Barringer points out the great danger of typhoid infection to those living along the trunk lines, to the workmen on railroads, and the continuous menace to the health of passengers themselves. The *Manual* before us is well written, and is an excellent resume of this important subject. A good index is appended to the book.

Manual of Bacteriology. By HERBERT U. WILLIAMS, M. D., Professor of Pathology and Bacteriology, Medical Department of University of Buffalo. *With 99 Illustrations. Third Edition. Revised, Enlarged*. Philadelphia: P. Blakiston's Son & Co. 1903. Cloth. 12mo. Pp. 351. Price, \$1.75 net.

The first edition of this *Manual* was issued in 1898; the second, 1901. The fact that a third edition has been so soon called for attests its popularity, and we may say its merits. The subject of Bacteriology in this edition has been well brought up to date—so far as could be expected in a manual. The illustrations are, for the most part, new and original. Interest in

the subject in this third edition has been increased by brief historical notes, which give pleasure and profit to the reading of the entire book, and these notes are apt to enchain the attention of the college student as well. Descriptions are all good, and easily understood by even the beginner in the study of bacteriology. This *Manual* is to be commended as well to the favor of professors or teachers of Bacteriology as a students' text-book.

Physics and Inorganic Chemistry. One of the *Medical Epitome Series*. By ALEXIUS McGLANNAN, M. D., Associate Professor of Physiological Chemistry, College of Physicians and Surgeons, Baltimore. Series Edited by V. C. PEDERSEN, A. M., M. D., Instructor in Surgery, etc., New York Polyclinic Medical School and Hospital, etc. *Illustrated with 20 Engravings*. Lea Brothers & Co., Philadelphia and New York. 1903. 12mo. Pp. 216. Cloth.

This little book meets its design—that of being an epitome of Physics and Inorganic Chemistry. It sets forth the accepted and proved *facts*; it does not undertake to treat of new discoveries and novel theories. It is a good guide book for the professor; a good review book for the student. Appended to chapters are sets of questions which greatly assists one in reviewing for examinations by the various boards of State and Army Medical Examiners. An Appendix of 5 pages contains important physical and chemical data, especially with reference to tables of weights and measures, electrical units, table of elements with their symbols and atomic weights, etc. The index is full and generally correct in its page references.

Editorial.

The Richmond Academy of Medicine and Surgery Elects Officers for Ensuing Year.

At the meeting of the Richmond (Va.) Academy of Medicine and Surgery Tuesday night, December 8, 1903, officers were elected for 1904, as follows: President, Dr. George Ben. Johnston; First Vice-President, Dr. D. M. Mann; Second Vice-President, Dr. O. F. Blankingship; Third Vice-President, Dr. J. Allison Hodges; Secretary, Dr. Mark W. Peyser; Assistant Secretary, Dr. W. Brownley Foster; Treasurer, Dr.

Ennion G. Williams; Librarian, Dr. A. G. Brown, Jr. Judiciary Committee, Drs. W. S. Gordon, Stuart McGuire, D. J. Coleman, H. H. Levy, R. F. Williams and R. D. Garcin.

The Daily Medical Journal, New York City,

Will be published beginning January 1, 1904. A physician will be needed in every town in the State in order to supply scientific, social, institutional and personal news, and regular newspaper rates will be paid for this service. Instructions, stationery and badge free. Address Mr. J. Antonowvitsch, 154 East 72d street, New York.

The Medical Examining Board of Virginia

Was in session in Lynchburg December 15-18, 1903. About 52 or 53 applicants for examinations were present—a number of them for "partial examinations." Three women and eight colored graduates appeared before the Board. The next session for examinations will be during June, 1904—due notice of which will be found on the fourth page cover of this journal after this issue. As soon as the Examiners have examined the papers and sent in their marks to the Secretary, Dr. R. S. Martin, Stuart, Va., so that they may be tabulated and compiled, the usual semi-annual report will appear in detail in this journal.

The Enno Sander Prize for 1904.

The prize essay competition of the Association of Military Surgeons of the United States for 1904 will be upon the subject of "The Relation of the Medical Department to the Health of Armies." The Association will aim, by encouraging research and investigation along medico-military lines, to obviate in future to the greatest possible extent the misfortunes which have heretofore attended the collection of large bodies of troops for active service. The competition is open to all persons eligible to active or associate membership in the Association. The first prize will be a gold medal of the value of one hundred dollars; the second prize will be a life membership in the Association of the value of fifty dollars. Such other papers as seems worthy will be given honorable mention, the author of the first of which also being entitled to a life membership in the Association. Further information may be had of the Secretary, Major James Evelyn Pilcher, Carlisle, Penn.

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Original Communications.

AMPUTATION OF THE HIP JOINT FOR SARCOMA, WITH THE REPORT OF SEVEN CASES, WITHOUT MORTALITY.*

By WM. B. COLEY, M. D. New York, N. Y.

Within the past fourteen years I have observed seventeen cases of sarcoma of the femur and twenty-two cases of sarcoma of the thigh. The majority of these were hopelessly inoperable when they came under my care, but in eleven cases I performed high amputation, i. e. in seven instances through the hip joint; in four just below the trochanter.

In my seven cases of hip joint amputation, the sarcoma started in the bone or periosteum in five cases, and in the muscles or fascia in two.

The ages of the patients ranged from 6 to 60 years, as follows:

Femur Cases—Male, 6 years; female, 11 years; female, 13 years; male 45 years; female, 60 years.

Thigh cases—Female, 24 years; male, 49 years.

Case I.—Small Round-Celled Sarcoma of the Femur, Periosteal; Hip Joint Amputation.—E. S., male, 6 years. Operation 7 months after the tumor was first noticed. No trauma. Patient made an excellent recovery. Four months later death from generalization of the disease with metastases in the lungs.

Case II.—Round-Celled Sarcoma of the Femur, Periosteal—Hip Joint Amputation.—F. N.; female, 11 years. Trauma. Amputation five months after receipt of injury. Uninterrupted recovery. Subsequent history could not be traced.

Case III.—Osteo-Chondrosarcoma of the Lower End of the Femur—Hip Joint Amputa-

tion.—L. Z.; female; 13 years. No trauma. Operation 6 months after disease was first noticed. The patient made an excellent recovery. Death two years after operation from generalization of the disease.

Case IV.—Osteosarcoma of the Femur—Hip Joint Amputation.—T. B.; male; 45 years. Trauma. Two to three months after receipt of injury noticed swelling which slowly increased. Amputation 7 months after receipt of injury. Excellent recovery. Death within a year of metastases in the lung.

Case V.—Sarcoma of the Femur, Periosteal—Hip Joint Amputation.—Mrs. D.; 56 years. No trauma. Amputation October 20, 1903. Good recovery.

Thus it appears that of my five cases of sarcoma of the femur treated by hip joint amputation, two died within a year, one lived two years, one was not traced and one, a recent case, is the only one in which the patient is known to be alive.

Case VI.—Spindle-Celled Sarcoma of Thigh—Hip Joint Amputation.—M. S.; female; 24 years. Amputation in September, 1899. Splendid recovery. Previous treatment with the mixed toxins. The patient remains well up to the present time, over four years since operation.

Case VII.—Spindle-Celled Sarcoma of the Left Thigh—Hip Joint Amputation.—W. V.; male; 19 years. Amputation in May, 1898. Death from recurrence 2½ years later.

Method of Operation.—Wyeth's method of wire pins was used in all but Case V, in which case the tumor extended up to Poupart's ligament, making it impossible to use the pins. External iliac first tied above Poupart's ligament; then disarticulation. The patient, though 56 years of age, and very weak and anæmic, stood operation very well; practically no loss of blood. Excellent recovery. Time of operation 35 minutes, about the same length of time required for Wyeth's method; one advantage noticed was

*We have pleasure in presenting the author's abstract of the paper read before the meeting of the Southern Surgical Association December 16, 1903.

the absence of oozing, so often seen when the thigh has been tightly constricted by rubber tubes or bandages.

Of my four cases of sarcoma treated by high amputation just below the trochanter, one, a sarcoma of the femur, died four months after operation of lung metastases; the second, a sarcoma of the femur, had a local recurrence at the end of 1½ year; disarticulation was then performed and the patient lived for two years longer, when he died from generalization of the disease; the third case in which amputation below the trochanter was performed, was a multiple melanotic sarcoma of the skin of the thigh, which died four months later, of generalization and internal metastases; the fourth case was a recurrent sarcoma of the thigh, primary in the tarsus. There was a local return in the gluteal region which disappeared under the use of the mixed toxins. The patient is alive and well at present, six years after amputation.

The question as to the curability of sarcoma of the femur by operation is one that is still more or less undecided. Butlin in his well-known book upon sarcoma states that of 68 cases collected by him which were treated by hip joint or high amputation, only one was known to be alive more than three years after operation.

My own observation has been in line with his, and it is my opinion that sarcoma in this locality represents one of the most malignant forms of tumors with which we have to deal.

Only six successful cases have come to my notice, the patients having remained well from four to twenty-one years after operation. And in one of these (Dr. Gerster's case) it is interesting to note that no amputation was done, since the disease was considered too far advanced for amputation. The patient was treated for some months with the mixed toxins of erysipelas and bacillus prodigiosus with the result that the tumor finally disappeared and the patient is at present well, with perfect use of the leg, five years afterwards. In this case the diagnosis was made by Dr. Mandlebaum (Mt. Sinai Hospital) and confirmed by Dr. T. M. Prudden (Coll. of Phys. & Surg.).

In another case (Dr. Bull's) which was well six years after amputation, a severe septic infection followed operation with continued night temperature for some time. In this case there was probably a streptococcus infection which, it is my belief, was instrumental in destroying any sarcomatous cells that might have been left behind and caused a recurrence.

In this connection it might be mentioned that also in one of my own cases of recurrent sarcoma of the thigh—the patient, who is still alive, more than six years after operation—the mixed toxins were used for several months prior to amputation. I believe the malignancy of the disease in these cases was greatly modified by the toxins.

This is in accordance with the view expressed by me in the discussion of Dr. Wyeth's paper on "Hip Joint Amputation for Sarcoma," at the Philadelphia Academy of Surgery, in 1901 (*Annals of Surgery*, Vol. XXXIV. p. 597). I then referred to the fact that the end results of operation for sarcoma of the femur, and of the long bones in general, were much superior in preantiseptic times—as shown by the classical papers of Gross—(*Am. Jnl of Med. Sciences*, 1879) to those obtained to-day. The explanation which I then offered, and the only one that seems plausible to me is, that the streptococcus infections that not infrequently occurred in the earlier period, destroyed the sarcoma cells that were left behind, and thus prevented a recurrence.

Returning to the question of operation for sarcoma of the femur, opinion is still divided as to what is the best method. While the weight of surgical opinion has long been in favor of high amputation or amputation through the hip joint, at the discussion in Philadelphia, referred to; Dr. Bloodgood, of Baltimore, expressed himself in favor of resection of the bone instead of amputation, and referred to the experience of Miculicz, (*Arch. f. Klin. Chir.* Vol. L., p. 660) who also recommends resection in place of amputation, in malignant disease of the long bones.

I have carefully gone over the cases reported by Miculicz, but do not believe they warrant us in giving up amputation. While the procedure may possibly be worthy of a trial in slowly growing myeloid sarcoma of the tibia, the radius and ulna, I believe it to be most unwise to extend it to periosteal sarcoma of the femur. In the latter the disease is so highly malignant and extends so far beyond the macroscopic limits, that it would be almost impossible to be sure of its complete removal by resection.

The chief danger of sarcoma of the femur lies in the pronounced tendency to metastases. Especially true is this of the periosteal growths. In many cases, I believe, generalization of the disease has already taken place before the operation. Hence the importance of a most careful

examination of the entire body, especially the lungs.

The practice so often recommended, of making an exploratory incision into the tumor prior to operation in order to determine the diagnosis, I believe to be attended with grave peril to the patient. Such incisions into the growth may cause the infectious sarcoma cells to enter the circulation and be carried to remote parts of the body, there to form the starting point of metastatic tumors.

With regard to the value and place of the X-ray and mixed toxins in sarcoma of the femur, I do not think we are justified in allowing the patient to run the risk of a generalization of the disease, which may easily take place during the weeks necessary to determine the success or failure of such treatment. I never have advocated the use of the toxins in sarcoma of the femur, always advising immediate amputation; and yet, in sarcoma of the long bones, I think a preliminary course of the toxin treatment might be justifiable. In support of this opinion I would cite a case of recurrent sarcoma of the tibia, in which the diagnosis was confirmed by Prof. John Caven, of the University of Toronto. In this case, before amputating, I treated the patient for three months with the mixed toxins, in large doses, with the result that the large tumor entirely disappeared. The patient is to-day in perfect health, working on a farm in Canada, six years after treatment.

As to the X-ray, we are not justified with our present knowledge, in assuming that an osteosarcoma of any kind, much less a sarcoma of such rapid growth and high malignancy as sarcoma of the femur, can be permanently cured with the X-rays.

CONCLUSIONS.

1. Sarcoma of the femur is a malady so dangerous to life, so prone to early metastasis, that only the most radical operation should be performed, and that, at the earliest possible moment.

2. Hip joint amputation is to be preferred to resection or to amputation through the shaft.

3. Recurrence being the almost invariable rule after all methods of operation, a thorough course of treatment with the mixed toxins after operation, as a prophylactic, offers the best hope of permanent cure.

REPORT OF TWO TRACHEOTOMY CASES.*

By CLARENCE PORTER JONES, M. D., Newport News Va.,

Fellow Medical Society of Virginia; North Carolina State Medical Society; Secretary Newport News Medical Society; Visiting Oculist and Aurist to Newport News General Hospital; the Dixie Hospital, Hampton; Specialist to Hampton Normal and Agricultural Institute; Consulting Oculist and Aurist to National Home for Disabled Volunteer Soldiers, Elizabeth City County, Va.; Expert Examiner United States Bureau of Pensions.

Having passed through somewhat of an epidemic of diphtheria in our section this year, we naturally have our attention turned to some of its complications, especially those which the laryngologist is called on to treat. And the few remarks, together with a report of two cases, will illustrate our views which may be found to vary with those of certain authorities, yet we feel justified in saying what is our honest conviction after careful study based on clinical experience.

Tracheotomy vs. Intubation.—We hold that tracheotomy is the preferable operative procedure to intubation, and that the higher death rate from the former operation is due to the fact that it is usually done too late in the course of the disease, when the constitutional condition is too much enfeebled to withstand the operation. Another reason is, intubation has at first been performed and the surgeon waits in his fancied security to find that some twelve to forty-eight hours afterward his patient is dying from an extension of the membrane further downward than the tube can reach, when he hastens to do tracheotomy which only hastens death. Then again the popular prejudices against so gruesome sounding operation as tracheotomy, cause parents to forbid the procedure until it is useless. There is no laryngeal tube long enough to reach the point below the probable point of membrane formation: while any of the ordinary tracheal tubes will. In passing the laryngeal tube in situ, a common accident is to push the membrane down into the trachea thus causing instant death. The operator stands also a much greater chance of infection by pieces of membrane, infected matter, etc., being coughed into his face and eyes. After intubation, the most constant care of a skilled nurse is urgent, the slightest accident requiring a most prompt attention. Feeding also is a difficult problem, food easily passing into the larynx making the taking of even liquid food, through the mouth hazardous. If nasal feeding is resorted to, the

*Read before the Seaboard [Va. and N. C.] Medical Association during its session held at Norfolk, Va., December 1903.

passing of the tube through the nasal cavities is a source of great annoyance to the child which causes most violent struggles which are obviously harmful; likewise is rectal alimentation harmful.

The laryngeal tube may get clogged with shreds of membrane necessitating its removal and repetition of the operation, and it is just as difficult to perform as before.

All these latter difficulties are overcome by tracheotomy. By means of the operation presently to be described the tracheal tube reaches further down than the site of probable membrane formation. There is no difficulty in feeding liquid, semi-solid, or solid food taken by the natural way. A skilled nurse in attendance is not such an urgent necessity as the canula can be removed *ad libitum*, cleaned and replaced. The air of the room should be made moist by boiling water or some chosen solution in an open vessel, a piece of wet gauze saturated with a like warm solution laid about the opening of the tube; this being done, the danger of bronchopneumonia is reduced to a minimum.

We wish to be understood in advocacy of tracheotomy that it is of value early in the disease, at the approach of, or shortly after the onset of distressing laryngeal symptoms.

The Stab Operation.—Not knowing any name for the following operative procedure, we have dubbed it "the stab operation." Gruesome as the name may sound we find it to be practical and easily performed as compared to the so-called classic operations. The details which are few in number are as follows: A large roll, preferably a big feather pillow tightly rolled in a towel is placed under the patient's shoulders as he lies on his back, thus causing complete extension of the chin. The area is cleansed with green soap, etc., lastly alcohol. The point of a keen blade scalpel is passed in an oblique manner, pointing toward the chin, through the skin and underlying parts into the trachea beneath the third ring in the median line. The next two rings above are cut by passing the knife upward. The handle of the same scalpel is now used to pry open the wound, the chosen tube is inserted and tied in situ with a piece of tape. Of course, every spurting blood vessel should be tied. If no hemorrhage, other than venous, no attention is as a rule necessary. Any tendency to shock should be tided over by artificial respiration until natural respiration is again established. The solid silver tube is

preferable to hard rubber on account of the greater durability as well as the ease in sterilizing by boiling, which the former possesses, but which the latter does not.

We will report two cases treated during the epidemic referred to which in our mind could never have been cured by intubation but were cured by tracheotomy, the reasons being set forth later.

Case I.—Boy seven years old; history good; had been healthy all his life until this attack. Saw him February 9th, in consultation with his family physician and two other consultants. Antitoxin in large and repeated doses had been given which had had a most beneficial effect. Respiration 42 per minute, pulse 130. Membrane on tonsils, post-pharyngeal walls and larynx. Intubation tried without any relief, in fact only aggravated the symptoms. By violent expiratory efforts small pieces of membrane were coughed up which gave temporary relief. Twenty-four hours later I was summoned to come very hurriedly. I found the condition most alarming—intense cyanosis, inspiration not over 6 per minute—most violent efforts at respiration. The family physician met me at the door and said there was no use doing any operation, that the patient was practically dead. I insisted and without any preparation whatever did the stab operation above described, finding a cast of membrane in the trachea which the knife opened along with the tracheal wall. On dilating the trachea a ball of membrane was found blocking the canal; this was pulled out with dressing forceps, and a medium sized tracheal tube was inserted. Artificial respiration was resorted to for about thirty minutes when breathing became quiet and natural—the patient falling into a peaceful sleep which lasted for seven hours, awaking much refreshed. Temperature 101.5° gradually fell, reaching the normal point on the fifth day after operation. The tube was removed after nine days, the wound healing in three days, a small scar remaining. A good brisk tonic and nutritious diet, together with outdoor exercise being ordered, his voice and general condition improved; he was able to speak normally by the latter part of July.

Case II.—Boy 4 years old. The usual antitoxin treatment had been given. Laryngeal symptoms urgent coming on by 10 A. M. August 12th, at 2 P. M. same day, I saw him with the family physician. Cyanosis was well de-

veloped; also violent respiratory efforts. The stab operation above referred to was done, a cast of membrane was found in the trachea, the tube inserted. Artificial respiration resorted to for five minutes when breathing became easy. Temperature then 100.2° , soon became normal and remained so. Solid food taken. On the fifth day the tube was removed, healing taking place in 48 hours, leaving a thin red line $\frac{3}{8}$ inch long as the only scar.

My personal use of antitoxin is limited as I only see diphtheria as a consultant. But from observance I am convinced that large and repeated doses are indicated and its non-use is akin to criminal negligence.

CONCLUSIONS.

Tracheotomy is the preferable operation to intubation; and when given an equal chance the mortality is less. That tracheotomy will cure many cases which intubation cannot cure.

2. Tracheotomy is a more simple operation and requires very simple after treatment, there being no difficulty attendant upon feeding the patient.

3. The stab operation can be performed by anybody who understands the anatomy of the neck, and its resultant scar is very slight.

4. That antitoxin, together with symptomatic and nutritious treatment, should be given in every case of diphtheria.

118 *Thirty-second street.*

some one is at fault that these cases do not come into the hands of the proper specialist sooner. There is no more important subject in the whole range of orthopedic surgery than that of tubercular osteitis of the knee, and it is one that should be of especial interest to the general practitioner as these cases always come under his observation first; the surgeon rarely ever sees them before the disease is well developed and often not until considerable destruction of tissue has taken place.

While it is my intention to confine my remarks chiefly to the *treatment of tubercular knees* it is eminently proper, at least that the most essential features of the *early diagnosis* should be included, as the most important part of the treatment depends upon the early recognition of the disease.

The objective symptoms of white swelling of the knee joint are usually so pronounced that error in diagnosis should not be made by one who has been properly instructed in, or has given any special attention to this affection. In spite of this assertion, I often see cases that have been treated for rheumatism until suppuration is well advanced or deformity has occurred that will require active surgical interference to cure. This mistake is often a very natural one with the average practitioner, for the disease is not a common one in his experience. I haven't a doubt but that there are many among you, active practitioners of many years experience, who have had no occasion to examine one of these cases since the time of your hospital training. My experience has shown me very conclusively that but few of these cases occur in the country; they are found chiefly among the inhabitants of the large cities who have had bad hygienic surroundings. Nevertheless no station in life is exempt. The rich as well as the poor have tubercular knees, and all of us should be on our guard, and be instructed as to what symptoms to look for in every lame knee that might indicate the beginning of this affection.

The chief symptoms to be relied upon are local heat, swelling, muscular spasm, reflex atrophy of the muscles both above and below the knee, and tenderness. This is about the order of their importance. I wish to call especial attention to the local tenderness, or pain, which can often be located within a small area, often not exceeding the size of a half dollar, over the head of the tibia, or over one of the condyles of the femur. This tenderness on

TUBERCULAR OSTITIS OF THE KNEE.*

By A. R. SHANDS, M. D. Washington, D. C.

In selecting this subject for a paper before so distinguished a body of men as those composing the Southern Surgical and Gynecological Association I feel as though I should offer an apology for again bringing forward so old a topic, for it will doubtless occur to many of you that this subject must surely be exhausted so far as anything the present writer can add; but no apology is needed for those of us who are especially interested in orthopedic surgery for we see many neglected cases that remind us that

*Read at the Atlanta, Ga., meeting of the Southern Surgical and Gynecological Association, Dec. 15th, 17th, 1903.

pressure is due to a localized periostitis just over the diseased focus.

Comparison of the suspected joint with its fellow is very valuable assistance, noting the obliterations of the normal depression about the joint. These changes occur very gradually as compared with rheumatism. In measuring the lengths of the limbs it should be borne in mind that when the disease is well established the diseased limb as a rule will be longer, varying from one-fourth to three-fourths of an inch. This is due to an overgrowth being produced in the cancellous bone by the hyperemia occasioned by the inflammation. Do not take any stock in the history of some traumatism that the parents are always aware of the child having sustained. I have yet to see a case of white swelling in a child in which there is not a history of a fall or injury of some kind. Upon close questioning you will generally find out that the child was a little lame before the injury was received, and there hangs the true story. The disease is generally responsible for the fall to which so much importance is attached by the parents. The inception of the disease is so insidious, causing unsteadiness of the limbs, that it should give the fall its proper place in the history of the case. It should be borne in mind that pain is not often a prominent symptom in the early stage of the disease; just the opposite is the case in rheumatism; diagnosis of white swelling should be made long before pain is well pronounced.

Localized heat as well as a localized tenderness is present from the beginning of the disease and is an important index to the progress of the case; if the joint is kept perfectly quiet it will disappear to return at once if anything goes wrong. It should serve as an urgent indication for protective treatment so long as it exists in any degree. Muscular fixation, nature's effort to immobilize the joint, is a prominent feature from the first; there may be a small arc of painless passive motion, but it will be checked by the muscular spasm just as soon as the limit is reached. Muscular spasm is much more prominent and constant in a tubercular knee than in any other affection of that joint.

The management of a case of white swelling can be embraced in the terms *immobilization* and protection in any and all stages of the disease. The indication is to preserve the function of the joint as far as possible, to arrest the progress of the disease, to prevent and correct de-

formities. Immobilization and protection with best hygienic surroundings and the best tonic treatment appropriate to the individual case will best accomplish the indication just mentioned.

If the diagnosis is made early and this line of treatment faithfully carried out, the large percentage of cases will yield very favorable results, many recovering with little or no disability. I wish it were possible for me to have you examine for yourselves some of the excellent results that I have obtained in cases treated early. The detail of the treatment must of course depend upon the condition of the patient when first taken under treatment. In the mild cases the immobilization of the joint with a plaster-of-Paris case and a pair of crutches is all that is needed. In this class of cases I do not use any form of steel brace, but do use the Thomas knee splint in cases in which the muscular spasm is so prominent a feature that the plaster-of-Paris does not afford efficient protection. It is an important question to know when to discontinue the mechanic treatment, even in the mild cases, and unfortunately it is hard to tell just when this can be done without risk of doing harm. It should be continued in some efficient form just as long as there is any active disease present which will be indicated by the symptoms described above as being diagnostic of the disease. The great advantage of this treatment is that it does not confine the patient to the bed. In fact every means possible should be used to keep the patient out of doors. In applying the plaster-of-Paris cast, great care should be taken to put at rest all of the muscles that have any influence over the motion of the knee. For this reason the plaster should extend from the middle of the upper third of the thigh to the foot. If plaster is properly applied it will relieve perfectly the painful spasm, and if you don't succeed in doing this the first time, then try again. Never use padding under the plaster but have the plaster case skin-fitting. To do this you should have only one or two layers of a roller bandage under the plaster, except over the bony prominences, where a little lint cotton should be used. If you use cotton under the plaster, it will in time roll up and pack to such an extent that the plaster will become loose and you will not have efficient support.

Flexion deformity is a very early complication in all untreated cases. Fortunate indeed do I think myself if I get a case before this complication is present. This complication

should be remedied at the very beginning of the treatment.

The means for this purpose will vary according to the degree of the flexion. When flexion deformity is present there is also much swelling about the joint, due to infiltration of the periarticular structures. This should be first reduced before attempting to straighten the knee, and can be accomplished by compression and fixation. The compression is gotten by strapping the joint with strips of rubber adhesive plaster, each about the fourth of an inch wide, beginning about five inches below the patella, applying them diagonally around the limb in a criss-cross arrangement, extending them about five inches above the patella. This process is continued, overlapping each strip until the whole knee is snugly encased. Over this a thin bandage is applied, extending well up the thigh and down the calf, and over this is applied a plaster-of-Paris case. No attempt to correct the deformity is made at this time. This dressing should be allowed to remain on for about two weeks, and if the flexion is due only to muscular spasm, when it is removed the deformity can easily be corrected with gentle manual pressure. If only a part of the deformity can be overcome with gentle force, then the same dressing should be applied for another period of two weeks, when in all probability the muscle spasm will have subsided sufficiently to allow light force to correct the remaining deformity.

If such means are unavailing I give the patient just enough anæsthetic to produce primary anæsthesia, when gentle manual force will complete the desired object. I use the expression "gentle force" advisedly, for a great deal of harm has been done by using too much force in straightening a knee that has been long flexed. By breaking up adhesion, the result of a tubercular inflammation, a new field for an inflammatory invasion is opened up, and it is very probable that a very acute process will develop and the second state of your patient will be very much worse than the first. Again there is great danger of rupturing the popliteal vessels by suddenly straightening a knee that has been flexed a long time. I have seen just such a result gotten by a general surgeon who believed in "redressment force." The patient was a young adult with a knee flexed to a right angle which was forcibly straightened at one sitting, with the result of rupturing the popliteal vessels.

Gangrene of the leg followed and an amputation was the ultimate result.

If the deformity cannot be corrected by a very reasonable amount of force in the early stage, then it had better be left alone until all indications of an active process of the disease have subsided, when it can be corrected by operative measures which will be spoken of later on in this paper.

In many of these early cases where there is a free passive motion within a limited arc, it will be found that the flexion deformity is caused by contraction of the hamstring tendons as a result of the muscular spasm having existed for a long time. In such cases it will be found that by doing a subcutaneous tenotomy of these tendons, very little force will suffice to straighten the knee; this I often do when it is necessary to give an anæsthetic, for it is not only an aid in correcting the deformity but adds greatly to the comfort of the patient after the knee is encased in plaster-of-Paris.

What has been said in this paper has to do with cases that have required no radical surgical interference, but unfortunately one who has to deal with many cases of this affection will frequently meet with some that have not yielded satisfactory results even after having the greatest care bestowed on them along the lines indicated above. These are the cases that have gone on to suppuration when the osteitis has extended until the periosteum has given way and allowed the joint cavity to become infected with the germs of suppuration. When the synovial fluid is infected pus formation takes place; synovial fluid is a fine culture medium for pus germs. When this condition has taken place, there is present a process that is capable of the most extensive destruction; hence you are called upon to adopt a radical measure to save the joint. The operative procedure will consist, according to conditions present, of incising and draining the abscess cavity, arthrectomy, excision, or even amputation.

When it becomes necessary to incise and drain the joint, it should be done most thoroughly, and good drainage should be kept up just as long as there is any discharge. When the infection of the joint is due to an osteitis that is near the surface of the ends of the bone, often the diseased bone sloughs away and when it can be easily located and curetted away, most excellent results are obtained. As an example of this fact, the following case is given briefly:

Case.—Mary B—, age 5 years. She was referred to me in January, 1897. Upon examination, I found her general condition good, well grown for her age and had been a healthy child from her birth. In the summer of 1896 she was noticed to be somewhat lame, but as the lameness was intermittent the parents did not pay enough attention to it to consult a physician for several months, when the lameness became constant and the knee began to give pain. She had no surgical attention until she came under my care as stated above. At that time the leg was flexed to a right angle on the thigh and held rigid by muscular spasm. The joint was much swollen and extremely painful to the touch and on the least attempt at passive motion. At that time I failed to detect fluctuation in the joint. The knee was strapped with adhesive plaster and a snugly fitting plaster-of-Paris case applied after correcting about one-third of the flexion deformity. This treatment was continued for about three months, when pus was detected in the joint. The child was then anesthetized, incision made on both sides of the joint, pus let out and the joint thoroughly washed out, and a tube put through the joint. The discharge continued for twelve months, when it finally stopped. At the time of the operation the limb was easily straightened, and was kept straight by means of a plaster-of-Paris case, until all evidence of the disease had disappeared. Crutches were used for about eighteen months; when all protection was left off, the child had about twenty degrees of passive motion.

I examined this child the last time in January, 1902, five years after I first saw her, and really to my surprise I found that the motion at the knee joint was almost perfect and she walked without a halt. This case illustrates what good results can be obtained from treating such cases conservatively.

This was evidently a case where the condyle was diseased near the surface and a bone slough occurred by piecemeal and came away gradually in small pieces, allowing nature to heal the abraded surface as the exfoliation of the dead bone took place.

This case was a most fortunate one to have gotten such good motion after suppuration. There are but few cases that get such good motion even when no suppuration has occurred.

It would be well here to say a word about the very prevalent opinion among many who have

not had an extensive experience in the treatment of chronic joint diseases that immobilization will produce ankylosis. It is a great mistake to think such is the case. My experience in the treatment of these cases, is, that the real function of the joint can better be preserved by absolute immobilization, than by any attempt at a passive motion in a joint that is in a high state of inflammation; for ankylosis is produced by the products of inflammation and suppuration; therefore anything that will check these processes will limit the ankylosis, and it is a well recognized fact that all wounds will heal more quickly the more perfectly they are at rest.

The operation of excision of the knee is a very old one. It was first done in 1782 and is still in great favor in certain cases. It should never be done in children except in extreme cases, and even then I believe that amputation would be best; for an artificial leg is more useful than such a leg as a child would have after excision. The epiphyseal cartilages are destroyed, and as a result the growth of the limb is checked to such an extent that the limb will be from six inches to a foot shorter than its fellow when the child is grown. Instead of excision the operation of arthrectomy is done in children. Excision is by far the best operation in adults for the reason that quicker results are obtained by removing in this way the whole diseased area of bone, and the growth of the limb is not to be considered.

Arthrectomy consists in curetting out all of the diseased bone short of interfering with the epiphysis. This operation can be repeated from time to time as indicated until all disease has been removed, and most excellent results follow in the large percentage of cases.

It is hard for one who has not had experience along these lines to appreciate what liberties one can take with a bone curette. In the heads of the long bones of children it is wonderful what can be done in this way. Nature seems able to replace almost any amount of bone in children provided you do not destroy the epiphysis and will leave the periosteum. Hence the treatment in the case of white swelling in children when there is extensive suppurative osteitis, is to locate the diseased focus and to remove it with a bone curette, wash out the joint and keep up good drainage as long as there is any discharge and protect the joint first, last and all of the time, by producing absolute immobilization; and for this purpose nothing equals the plaster-of-Paris

case, for with this you have the advantage of dressing the suppurating wounds through windows cut in the plaster.

It is not an unusual experience for the surgeon to have a case brought to him when nature has effected a most excellent result so far as curing the disease is concerned; but the cure has taken place and left the knee in a very distorted position; then it becomes his duty to correct the deformity. The course to be pursued here will depend on what is necessary to be done. If the deformity can be corrected by a simple supra-condyloid osteotomy without the sacrifice of bone, it should be done at once; but if an excision is necessary the age of the patient must be considered, for if it is at a time when the growth of the limb is going to be influenced, then the operation should be delayed until such time has passed. Whenever the deformity can be corrected by removing an amount of bone short of destroying the epiphysis, it can be done regardless of age, provided all acute symptoms have subsided sufficiently long to assure you that no active disease exists.

There is one important point in the after treatment of the cases in children that deserves especial mention, and that is, that whenever the cases recover regardless of the treatment, whether operative or non-operative measures were used, with stiff joints the knee should be supported for a long time with some apparatus that will prevent deformity occurring. There is always a tendency for the development of either knock-knee or flexion. The most convenient and at the same time a perfectly efficient apparatus is a plaster-of-Paris case. I generally use a leather case made of very stiff leather modeled over a cast of the knee. This has laces down the front of it, so that it can be readily removed. As an illustration I will give briefly here a history of a case in point.

Case.—Donald H., age 16, came under my care May 24, 1898, with the history of having developed white swelling of his right knee when about seven years old. He had a very extensive osteitis, and had been operated on numerous times at long intervals by two of the most eminent surgeons in this country. Operations consisted of abscesses galore being incised and drained at different times; several years after inception of the disease, as the abscesses continued to develop, arthrectomy or bone curettage was done, and finally as scraping the bone did not relieve the condition, an excision was made

with an excellent result so far as curing the disease was concerned. The last surgeon who did the excision evidently did not appreciate the importance of after-mechanical treatment to prevent recurrence of deformity. Several years after this operation, when he came under my care, there were 30° of knock-knee, and about 20° of flexion present, with a firmly ankylosed knee. I did a cuneiform osteotomy at the seat of the old operation to correct both deformities. The wedged-shaped pieces of bone I removed were so shaped as to overcome both the knock-knee and flexion. The line of incision I made healed by perfect primary union; there was a superficial ulcer to develop, result of undue pressure of the plaster-of-Paris, over one of the bony prominences of the knee. This ulcer healed in the plaster-of-Paris, I applied a stiff leather case, which was worn for several years. At this time the limb is in the same straight position in which I placed it at the time of the operation.

While above I practically condemned the operation of excision in children, it is the operation of choice in the adult knee affected with white swelling, for the reasons above set forth. I have very recently had an excellent case to illustrate the beauty of this operation in adults.

The case was in a man forty years old who had suffered with his knee about eighteen months. When I saw him, April 22, 1902, for the first time, the knee was much swollen, local tenderness well marked, although the whole knee was quite painful on the least attempt at passive motion. I advised immediate excision, which was done four days later. Upon opening the knee joint through the usual semi-lunar incision quite a quantity of straw-colored fluid came out. The entire capsule of the joint was much swollen, highly inflamed, and studded thickly with what appeared to the naked eye to be tubercles. Both the head of the tibia and the condyles were diseased. The entire capsule was dissected out and head of femur and condyles removed. This wound was closed and primary union resulted. I last examined this patient September 1, 1903, and much to my delight I found that the result was all that could have been expected. This patient's average weight before the illness had been about 140 pounds. At the time I operated on him his weight was 118 pounds. At the time of this examination his weight was 153 pounds, and he was in a fine physical condition which was largely due to the excellent and thorough treat-

ment he had had at the hands of Dr. W. M. Barton, of this city, for his general tubercular condition.

In conclusion I wish to state that there is no trouble of this nature that comes under the care of the orthopedic surgeon that offers as good results as this knee trouble, if he will persevere in executing faithfully the line of treatment I have mapped out in this desultory paper. There are many details of importance that I have not been able to dwell upon in this paper for lack of time and space, but it has been my aim to throw out some hints that I trust will be of service to some of you, both in aiding you to recognize early the next case that comes under your observation, and in helping you to institute appropriate treatment at the outset, and if I have succeeded I shall feel well repaid for the labor of preparing this paper.

1328 New York Ave., N. W.

A VISIT TO PROF. KEHR'S CLINIC IN HALBERSTADT, GERMANY.

By I. S. STONE, M. D., Washington, D. C.,
Surgeon to Columbia Hospital, etc.

The subject of this sketch is one of the wonders of that interesting country which has given so many remarkable men and equally remarkable discoveries to the world. We say that he is "wonderful" because he has apparently had the genius to do what no other man in that or any other country had previously done, namely, to place the surgery of the organs in the upper abdominal cavity upon a secure and permanent footing. His careful study of the diseases of these organs, together with his ability to successfully treat them, has borne the fruit such labor justly deserves, and he is now the most celebrated as he is the most experienced surgeon living who makes the surgery of the liver, pancreas and stomach a specialty. This claim for Dr. Kehr is not made without some misgiving, for one naturally prefers to make such complimentary mention of our own deserving men; but we have seen reports of nearly eight hundred and fifty gall stone operations performed by him, and have observed his work both as to amount and character.

Prof. Kehr resides in a town of rather small

size (40,000 or less) in a fertile agricultural region, about three hours from Berlin and near to Halle, a well known University town.

We were impressed with the difficulty of reaching the town of Halberstadt by rail. We went by way of Nuremburg from Munich and were obliged to make two changes before finally reaching the city. As one may imagine we found the town rather provincial, but most orderly and well governed. Perhaps it is the more interesting because the tourist as a rule finds nothing to attract him there. Here one may see a thrifty, and withal very happy and contented population who manage to exist without annual visitation of hundreds or thousands of sightseers. It is refreshing to get away from this vast army of tourists after one has been in Switzerland for a time. If one of my readers ever feels like retiring to perfect seclusion, where no sound of English words can reach his weary ears, let me commend Halberstadt to him. Here one may rest from the annoyances that are imposed upon travellers generally. One is not suspected of being a tourist, so few have been those who imagine they can be entertained by a visit there.

I ransacked the town, went into book stores, inquired of anybody and everybody I could, for some English book or paper. Nothing could be found save the translation of Prof. Kehr's book by Seymour, and I had already read that. But it was, nevertheless, a delight to me and I almost read it aloud for the pleasure it gave me. I was unable to speak German, yet it was possible to have a most profitable week's visit with Prof. Kehr.

The operations performed are not the only interesting and profitable opportunities for observing the man and his work. Many patients come to him for examination and opinion. Of these a comparatively small number are subjected to operation, but their careful study and daily observation is most interesting and instructive. Equally important is the after treatment, for here we see the results of operation in such manner as to be thoroughly acquainted with the actual and immediate result of surgical work. The dressing is done in a special room, so arranged as to permit the use of water *ad libitum*. The patient is placed upon a suitable table and after the bandages are removed the wound is exposed while the irrigation proceeds. When Prof. Kehr is at home, all dressings are made by himself; his first assistant performs

this important duty in his absence. One will see nearly all patients with open wounds dressed daily after such dressing has been commenced. For instance, if a gall stone has had cholecystectomy with hepatic drainage, the dressings are not disturbed for several days although abundant gauze packing has been used. A long rubber tube conveys the bile to a bottle or some similar vessel on the bed alongside of the patient. We were convinced of the utility of this manner of after treatment and believe it has some important advantages over the ward dressing. With the patient in a strong light and fully exposed, one may see the progress made by these patients as is possible in no other way. In Germany one observes no sentimental consideration of the patient. Shielding patients from exposure is subordinate to convenience of utility. We saw very little objection raised by patients against going to the dressing room. All appeared to expect this quite as much as any other part of the hospital treatment.

If one witnesses the work of this surgeon he may not fail to observe certain characteristics which may have enabled him to attain that measure of success we have already claimed for him. The work of the day usually begins about nine o'clock, after a brief visit to the patients most recently operated upon. The surgeon who is entitled to have regular or permanent assistants is indeed fortunate, and we noticed how competent and reliable were the men who filled this important position in relation to the operator.

Prof. Kehr used chloroform altogether during my visit there and has a special apparatus designed by Roth, of Berlin, for administration of oxygen with chloroform. Perhaps I will be doubted when I assert that operations continuing for one hour only required 40 c. c. of chloroform and I remember one or more of nearly two hours with 55 c. c. During the operations there was no evidence of trouble of any kind, no vomiting, coughing, cyanosis, or sensation manifested by the patients. One may see in Prof. Kehr's clinic almost the exact reproduction of the aseptic technique of Dr. Bantock and the late Lawson Tait. There is no use of antiseptics unless alcohol be considered one. Prolonged scrubbing of the hands with soap, brush and water: the abdomen of the patient treated in the same way by the operator himself. One can see here why the German surgeons master all difficulties. A long incision enables one to see, and better understand the relations of other adja-

cent organs. We were duly impressed with the importance of observing the size and condition of the stomach in all these operations. There is beyond doubt in many cases associated disease of these organs. Displacements, stenosis of pylorus, dilation, ulceration, and many other conditions are observed by surgeons who actually inspect and operate upon the organs mentioned. The pancreas comes in for its share of attention and one can here see the "open treatment" for acute pancreatitis applied most thoroughly and efficiently. Perhaps the most important and remarkable operation recently performed by Prof. Kehr was for aneurism of the hepatic artery. We did not see this operation but saw the patient about two weeks afterward, and although very anæmic, appeared to be in good condition and we believe he fully recovered. A recent German medical periodical contains a report of this case.

While in Munich I met my friend Dr. Charles P. Noble, of Philadelphia, who saw this operation and who told me of the interesting work of Prof. Kehr, and kindly gave me a letter of introduction to him. I had, however, already met Prof. Kehr in Washington, while here attending the Congress of Physicians and Surgeons, in May. He is thoroughly in earnest about his work and as one may see in reading his book on Gall Stone Surgery, is inclined to score against the "Carlsbad Cure" when an occasion offers. This attitude on his part is perfectly natural, for the Carlsbad people are equally vigorous in denouncing Prof. Kehr. When one sees the conditions found by Prof. Kehr, and surgically treated by him, after a "cure" at Carlsbad, one can judge for himself of the efficacy of the Spa treatment for gall stones. It must not be said, however, that he operates upon all cases referred to him when stones are suspected. He has always a number of patients in waiting. They are perhaps having some septic complications, or else give promise of a cure without surgical treatment. Prof. Kehr drains the hepatic duct in a large proportion of operations for biliary infection and obstruction. He believes that this feature of his work is a great advance over former methods. In all cases selected for cholecystectomy performed during my visit, this was done. He has practically abandoned the suspension and drainage of the gall bladder, a beneficent and easy operation which seems to us quite valuable, as it is both safe and efficient in many instances.

In an experience of at least thirty-five cases the writer has seen good results from this operation, and has heard nothing to the contrary from his surgical friends in this country. But Prof. Kehr says a man with a record of one hundred gall stone operations is just learning how to operate; hence we reluctantly admit that we are still under the ban of inexperience. At the clinic in Halberstadt one may learn much from observing the work of this remarkable man, and we are deeply indebted to him for permitting us to witness his operative work, while both of us labored under the disadvantage of not speaking the language familiar to the other's ears. Prof. Kehr spoke almost no English, and I am quite sure that I spoke very little, if any more, German than he did English. His assistant, however, could speak a little English and French, and as Prof. Kehr uses a number of Latin terms in explaining the anatomical and pathological features found at the operation, one could fully understand the leading features of the work in hand.

1618 Rhode Island Ave.

(To be continued.)

THE FINSSEN LIGHT CURE.

By H. JOHN STEWART, M. D., Chicago, Ill.

Having read and heard so much about the Finsen light treatment in the cure of disease, I decided in April of this year, to make a personal investigation to see and learn for myself if it was true that such diseases as lupus and rodent ulcer could be cured by light. I visited several institutions where the Finsen Lamp was in operation. In Manchester, England, in the Salford Skin Hospital they had a Finsen Light department under the supervision of Prof. Brooke who informed me they were unable to treat half the sufferers who applied for treatment, and they had solicited, by public subscription, \$125,000 for the erection of a new hospital for skin diseases, where they would be able to enlarge the "light department" so at least 200 people could be treated daily, as there were people on their waiting list whom they would be unable to treat, with their present facilities, for an indefinite time. Prof. Brooke was most enthusiastic over the wonderful results they were obtaining there.

I next visited the London General Hospital, of London, England, and found they were just completing an immense light department, that had been established by the present Queen of England, then Princess of Wales, in 1900, who presented the first lamp at that time, and as it was found to be far too inadequate, she had just given a second lamp, and Alfred Harnsworth had also given \$50,000 for the perpetual endowment of another Finsen Lamp in this department, and they were then building a platform to receive the King and Queen whom they expected to come June 11th to dedicate this new department, and even with these increased facilities, I was informed by Prof. Squirey, there were patients on the waiting list who were unable to receive treatments.

I next visited the Light Institute at Copenhagen and found that all the statements that had been made regarding it were not in the least exaggerated. I had the pleasure of meeting and studying under Prof. Finsen himself and was extended every courtesy by Prof. Finsen and his assistants at this institution. He seemed very much pleased to describe in the minutest detail the apparatus, treatment, etc., and gave me a detailed history of the Finsen Light.

The Finsen Light is a large specially constructed arc lamp of 20000 candle power or twenty times stronger than an ordinary street lamp and uses from sixty to eighty amperes of current. This lamp burns a specially made carbon which can only be procured at Copenhagen. In the upper holder is a large carbon, while a smaller one is used in the bottom holder; when properly adjusted for arcing a maximum number of violet and ultra violet rays are produced. The advantage of the Finsen Lamp over others is in the greater number of violet rays produced. The Finsen Lamp produces a much greater number of chemical rays than sunlight, as the atmosphere absorbs a large percentage of these rays. The light is so intense it is impossible to look at it with the naked eye and it is necessary for all the attendants and patients to wear dense smoked glasses while the lamp is in operation; an aluminum hood about two feet wide surrounds the lamp, which hood is fringed on its lower border with a deep crimson colored paper skirt to further aid in excluding the diffused light from the patients.

The concentrated rays are carried from the arc to the patients through four telescopic tubes, known as converging tubes, suspended at an

angle of forty-five degrees, the tubes containing a series of rock crystal lenses so arranged that reservoirs for running water exists between them. By means of the water screen and rock crystal lenses, all rays but the violet are eliminated, and these rays are converged and concentrated, thus vastly increasing the healing and bactericidal effects.

The heat from the original arc is so intense that to prevent cracking of the lenses and discomfort to the patients, a stream of cold water is kept constantly circulating through the reservoirs or water screens.

To further concentrate and cool the rays a compressor is provided which consists of two rock crystal lenses so arranged that a chamber for running water exists between them. This part of the apparatus is used to compress the affected area and make it bloodless during the treatment, thus facilitating deeper penetration. The Finsen arc light has been used with marked success in curing many skin diseases, thought until this time incurable, especially lupus and rodent ulcer. During a period of six years the Finsen Medical Light Institute at Copenhagen has grown from a very small shed, where they were only able to treat one patient at a time, to a magnificent institution where they are now treating three hundred people daily, and Light Institutes have been established in London, England; St. Petersburg, Russia; Paris, France, and Chicago, Illinois, where they are all carrying on a similar work to the parent institution.

It has been a popular belief that lupus was a very rare disease and common only in the northern countries and although it was supposed there was no lupus in London, yet the hospitals are now treating 175 daily and the management was compelled to install two more lamps and build a separate department, so great has been the demand from people seeking relief. Lupus was considered very rare in the United States, but since the establishment of the Finsen Light Institute in Chicago the author is informed they have been taxed to their utmost capacity, and they, too, have found it necessary to increase their facilities as there are now patients on the waiting list who are not able to receive treatment. It seems but a question of a short time until Light Institutes will be established in every large city in America, because it has proven so efficacious in many other skin diseases besides lupus and rodent ulcer, such as acne,

alopecia-areata, localized eczema, chronic ulcers and naevus. The treatments are given while the patients recline on couches. By firm pressure with the compressors on the tissue to be treated, the blood is removed and more heat can be borne and deeper penetration produced; this compression has another important advantage in that the bactericidal effect is greater because it has been shown that the corpuscles absorb a considerable portion of the rays and thus prevent deep penetration.

The affected area is placed about ten inches from the distal end of the converging apparatus and the treatments, or seances as they are called, take about one hour daily in lupus and rodent ulcer, and in other skin diseases from ten to twenty minutes, depending upon each individual case.

The results attained have been hardly less than marvellous since from carefully compiled statistics covering a series of over 800 cases of lupus treated at the Finsen Institute an overwhelming percentage of cures and an insignificant number of failures is shown, and Professor Finsen goes so far as to say that in lupus-vulgaris cures can be obtained in 97 per cent. of cases even where the whole face is involved. In these 800 patients, with ages ranging from 5 to 74 years, the average duration of disease was eleven years. This treatment has an advantage over the X-ray in that there is no danger of burning and consequent sloughing. With the light treatment we are dealing with a known quantity, while with the X-ray we have an unknown quantity of uncertain action.

The light treatment causes no pain; a red erythematous spot and blister appears where the light is applied, and in five or six days the scab falls off and the ulcer is healed beneath, and the skin is left free from scar or cicatrix, but red, the redness, however, after a variable period fades and leaves the skin white and uncontracted, except where there has been a loss of tissue from the disease before treatment.

In conclusion, the author would state that the possibilities for the light treatment in the curing of diseases are still unknown, and believes in a limited time it will take an exalted position in the field of medicine and surgery.

2118 West Lake Street.

Druggist: "Pills my dear?" Little girl: "Yes, please, sir." Druggist: "Antibilious?" Little girl: "No; Uncle is."

SOME NOTES ON THE SYMPTOMS AND DIAGNOSIS OF CHOLELITHIASIS.*

By STUART McGUIRE, M. D., Richmond, Va.,

Professor of Surgery, University College of Medicine; Physician to St. Luke's Home, etc.

The interest of abdominal surgeons first centered in the uterus, ovaries and Fallopian tubes; later, the appendix has been the organ to be most largely studied and discussed. At present, the gall bladder and ducts are the objects of greatest interest. Cases of gallstone have been recognized and treated for many centuries, but until Marion Sims did the first premeditated operation for the removal of a biliary concretion, some twenty-six years ago, the disease was considered a medical one and not amenable to surgery. The belief that gallstones could be relieved by diet, exercise, mineral waters and drugs had been so long entertained that even to this day the laity, and many of the profession, thought surgery should only be resorted to when continued jaundice or profound sepsis threatened the patient's life. By the earnest efforts of many teachers this fallacy is being corrected and the truth of the fact appreciated that surgical intervention should be practiced in every case where gallstones give decided symptoms; for early surgery on the biliary tract, like early operations for appendicitis, is safe and easy, while late surgery is difficult and desperate.

Attention is called to the frequency of gallstones. Post-mortems on a large number of bodies show that they exist in from three to ten per cent. of all cases. The reasons diagnosis is not oftener made are because many stones are quiescent and give rise to no symptoms, and because symptoms which often originate from gallstones are misinterpreted and attributed to gastritis, intestinal indigestion, chronic appendicitis, loose kidney and other troubles.

Regarding the cause of the formation of gallstones, there are two theories: One that there is a chemical change in the bile which causes precipitation of its solid constituents; the second, that infection of the gallbladder with the colon bacillus, or the germ of typhoid fever, gives rise to cholecystitis and the secondary formation of stone. Gallstones are usually found at or after middle life; are three times more common in women than in man; are most often observed in those who lead sedentary lives, wear tight clothing and eat to excess.

The symptoms of gallstone depend largely on its location. If the calculus is in the gallbladder or cystic duct, the symptoms are local and consist of spasmodic pain colicky in character, attended by tenderness in the epigastrium and frequently distension of the gallbladder sufficient to make it perceptible on palpation. If the stone, however, is lodged in the hepatic or common duct, in addition to the foregoing local symptoms there will be constitutional symptoms due to the absorption of bile in the blood. The symptoms in detail are, 1. *Pain*, due to spasmodic contraction of the gallbladder in its efforts to force its contents through the ducts obstructed whether by impaction of a stone or the turgescence of their mucous lining. This pain is colicky in character, located over the gallbladder and distributed either in the direction of the right shoulder, umbilicus or other portions of the abdomen. The pain varies in duration sometimes lasting only a few minutes, sometimes continuing with only slight intermission for weeks. 2. *Tenderness and rigidity*, due to localized peritonitis, pressure over the gallbladder giving intense sickening pain, while pressure over the right shoulder, umbilicus or region to which the pain is referred is unattended by pain. 3. *Collapse, vomiting and fever*, coming on in severe cases in the order mentioned and being due to reflex irritation or septic infection, the fever sometimes running high from the start, but occasionally being of a low type and simulating that due to typhoid. 4. *Distension of the gallbladder*, caused by obstruction to outflow and accumulation of mucus or hepatic secretion. In some cases the bladder reaches an enormous size and has been mistaken for a loose kidney or ovarian cyst. In other cases the bladder becomes much thickened and contracted. 5. *Enlargement of the liver*, sometimes due to distension of the capillaries with bile and sometimes due to hepatitis either of acute or chronic type. 6. *Jaundice*, due to the absorption of bile in the blood, characterized by a yellow discoloration of the skin and eyes, and attended by coffee-colored urine and clay colored stools. As a frequent associate there is intense itching of the skin. Jaundice, while formerly considered pathognomonic of gallstones, is by no means a constant symptom, and is frequently a result of other diseases. In last year's work at St. Luke's Hospital, there were twelve cases of gallstone and only four of them were jaundiced. During the same period, there were eight cases of jaundice

* Read before the Richmond Academy of Medicine and Surgery, November 24, 1903.

and only four due to gallstone, the remainder being the result of cancer. Differentiation between the jaundice of gallstone and of cancer is sometimes impossible except by an exploratory incision, the general rule laid down by authorities being that intermittent jaundice is caused by gallstones, while persistent jaundice is usually due to malignant disease.

As a result of gallstone there is frequently cholecystitis, empyema of the gallbladder, gangrene of the gallbladder, and cholemia or bile poison, which frequently terminates in acute nephritis.

The importance of diagnosing gallstone cannot be overstated. The mortality of operations in the early stage is only one per cent., while in advanced cases it is at least fifty per cent. If the possibility of cholelithiasis were constantly borne in mind, there would be fewer cases treated ineffectually for gastritis and indigestion, and more cases operated on and cured for gallstone. I remember seeing, when a boy, a surgeon exhibit an unusually large number of vesical calculi to a number of doctors, and, when asked how he found so many stones to operate on, hearing his terse reply, "I looked for them." This will be the case with gallstones if the possibility of their presence is constantly borne in mind. Looking for them will not give them to the patient, but finding them will bring relief through an appropriate operation. Difficulty in making a diagnosis in the case of gallstones is due to the fact that one or more of the so-called cardinal symptoms are frequently absent. In any given case, the first thing to do is to get a complete history and a careful description of all symptoms. If at any time there have been gallstones in the feces or vomitus, especially if the calculi have been faceted, the diagnosis may be made absolutely. The passage of one gallstone almost invariably indicates the existence of others in the bladder. The deep prod or poke in the epigastrium with the clenched fist is spoken of by some authorities, as of value, causing in the case of gallstone a sickening sensation. Inspection, palpation, percussion and auscultation, all afford evidence of value. Examination of the blood is sometimes of interest as the occurrence of marked leucocytosis would indicate suppuration. Examination of the urine should always be made as in some cases a trace of bile will be detected when the amount in the blood is insufficient to cause appreciable jaundice. The X-ray in my experience, has been

practically of no value. Gallstones are composed largely of cholesterol, and are so transparent that they do not cast a distinct shadow on either the fluoroscope or the photographic plate.

THE CONSTITUTIONAL CONDITION IN AMPUTATIONS.

By THOS. H. MANLEY, M. D., Ph. D., New York, N. Y.,
Visiting Surgeon to Harlem and Metropolitan Hospitals.

In all cases of serious traumatism of the extremities, involving a disorganization, we should never neglect to determine the precise constitutional condition before we undertake an amputation.

Sometimes we are permitted no discretion, and must take our chances; but even in this event, with a correct knowledge of our patient's general state, we may avoid certain dangers, and be enabled to make a fairly certain forecast of prospective results.

Amputations *sur le champ* of pre-antiseptic times belong to ancient history. We are now permitted time to deliberate; if we contemplate amputation, to critically inspect the site of disorganization and examine the organs.

Alcohol.—Not infrequently it is well to determine, if we can, whether or not our patient was intoxicated when injured. An excess of alcohol blunts the faculties to the sense of danger, it renders the limbs ataxic, with loss of muscular control; in my experience, the larger number of these coming under my care for grave crushes of the limbs by accident, a majority were more or less drunk at the time. Moreover, alcoholics when injured are prone to develop delirium tremens; they bear the effects of shock badly, their mortality is large, and in any event, repair with them is often tardy.

Tubercular or luetic disease.—Strumous patients often possess remarkable vitality, and when pulmonary breaking down is absent, they bear amputation well. It is a question just what role syphilis plays in influencing repair after trauma; except, in the very acute, or the degenerate phases of the malady, we may probably discount it, as a pernicious factor, when an operative procedure is to be undertaken.

Diabetes.—A patient with markedly saccharine urine, presents almost redoubtable obstacles to successful surgery. But very few of these

sustain safely a major amputation for senile-gangrene, operate how we may.

Neurotic or rheumatic patients.—In these when the subject of a mangled limb the degree of pain is greatly intensified; this is specially accentuated when the trauma is near or involves a joint.

Morbid susceptibility.—We will encounter among those who have sustained a severe trauma, a very wide difference in the degree of tolerance. We will observe that often the degree of collapse is out proportion to the extent of injury. Deep melancholy or settled despair is a notable feature. In a widespread traumatism, accompanied with great exsanguination on the contrary, we will observe frequently a listless, indifferent condition; they complain little if any and beg for severe silence. In the first group, mortal shock after operation is always to be feared.

Every experienced operator well knows that those patients who have a premonition of death are not promising cases, and we will do well here not to be too optimistic in prognosis lest scientific medicine sink into disrepute, and we leave ourselves open to censure.

115 West Forty-ninth Street.

Analyses, Selections, Etc.

Surgical Physiology of the Lymphatic System.

Dr. C. H. Mayo, surgeon to St. Mary's Hospital of Rochester, Minn., read a paper on this subject before the Southern Surgical Association December 15, 1903, of which the following abstract is made:—

A study of the lymphatic system readily explains many normal physiological, as well as pathological processes. The subject is deservedly receiving more attention from surgeons who now generally recognize that, aside from acting as the general absorbant system, it is constantly engaged in maintaining nutrition as well as in the defense against pathological processes.

All tissues are provided with lymph vessels and glands in direct proportion to their exposure, activity and necessity for repair.

The tissues of the body are constantly bathed

in lymph, which fluid, similar to and derived from the blood plasma, must all pass through the lymph vessels and glands. In the glands, the lymph is exposed to the direct action of the leucocytes which are there found in great abundance. It is in the glands that infection is checked and destroyed, if it does not overpower the gland and develop local growth. An enlarged gland is an evidence of a local struggle or a defeat. The lymph system undoubtedly performs a great function in draining the ductless glands. Considering the lymph supply of certain regions, we find that the brain is deficient in lymphatics in its structure, the arachnoid serving this purpose upon its surface. Hemorrhages into its structure become cysts from lack of absorption, and infections in its substance cause but little temperature or general disturbance except from pressure. The liver and kidney show the same condition in a less marked degree. The lungs, rich in lymphatics, give constant rise of temperature from infectious diseases. Chills usually signify the direct delivery of accumulations of infection into a vein. In certain diseases resulting from a loss of equilibrium between the production and absorption of fluids, we substitute one set of lymphatics for another by operation as in glaucoma and hydrocephalus.

When we consider lymphatic conditions in connection with surgical work, we find that there is a real principle involved in drainage whether it be internal or external.

Varieties of Drains and Drainage Adjuncts.—First is rest by splints, pressure dressing or bed, to quiet the circulation. Second, by elevation to reduce arterial supply and favor venous and lymphatic return. Third, by massage to break up coagulated exudates and enable the lymph vessels to remove the exuded material. A good masseur, for instance, will relieve the ecchymosis and swelling of a black eye in a remarkably short time by alternate massage and rest. Fourth, moist dressings favor escape of exudate from open wounds, and also favor the lymphatic circulation in closed injuries. Fifth, adjuncts to drainage in the use of solutions having affinity for moisture acting by osmosis, as glycerine or alcohol. Sixth, wound drainage is accomplished by the open method with or without secondary suture. Seventh, by separate incision. Eighth, by wicks, capillary or tubular drains or gauze packs as mechanical aids.

Fracture—Dislocation of the Spine.

Dr. J. Shelton Horsley, Richmond, Va., read a paper on this subject at the Southern Surgical and Gynecological Association at Atlanta, December 15th. He reviewed the opinions of several authorities on the treatment of this lesion, and showed that opinions have changed from time to time. The operation of laminectomy is a very old one, dating from the seventh century. Sir Astley Cooper favored the operation; Bolton, of New York, in a paper published in 1899 has given very pessimistic views, but of late the tendency seems to be to favor operation. McCosh, of New York, and Harte, of Philadelphia, have done a great deal to promote this view. McCosh has reported two cases out of six that have been absolute recoveries. Harte and Stewart have reported a case in which there is positive evidence of regeneration to a great extent when the cord had been completely severed at the 7 and 8 dorsal vertebræ.

Dr. Horsley recommends that in treatment individual judgment should be used as in other surgical operations. He emphasizes the similarity between injuries of the spinal cord and injuries of the brain so far as treatment is concerned, and calls attention to the fact that without an operation or a postmortem examination it is impossible to tell by symptoms alone when the cord is completely destroyed. He advocates the plan of McCosh to operate in all cases of complete paralysis below the injury unless there is improvement within 24 hours after the injury. When the trauma is especially marked he operates sooner. He points out that the danger of delay lies in degenerative changes in the spinal cord which set in soon after the injury. Early operation may arrest this degeneration.

He reports six cases. In two of them the injury was received several years before he saw the patient. In one there was a forward dislocation of the axis and atlas from the third cervical vertebra; this was demonstrated by an X-ray picture. The patient had paresis of the muscles of the arms, body and thigh. There were disturbances of sensation in various degrees over the body and limbs. He reports two other cases in which fatal results rapidly followed the injury. One was from a gunshot wound, and the other was the result of a fall on the shoulder in which there was a fracture—dislocation in the lower dorsal region. The last two cases he operated upon, in one of these there was an injury at the lower dorsal region where

the whole of the dorsal spinal column was dislocated forward upon the lumbar spinal column. The spinous process of the last dorsal vertebra was fractured. The cord was caught between the last dorsal and the first lumbar as between the blades of a pair of scissors. However, it was not completely crushed as the dislocation was not extensive enough. It was impossible at the operation to reduce the dislocation; so the spinous processes and the laminae of the last 3 dorsal vertebræ were removed. This relieved pressure on the cord. The patient died, however, from pneumonia a week later without any improvement in spinal symptoms. A post-mortem showed wound in excellent condition, with the cord softer than at the time of operation, and solidification of the whole lower lobe of the right lung, and a part of the middle lobe. In the other case operation was undertaken about a month after fracture of the 11th and 12th dorsal vertebræ in a laborer 19 years of age. The cord was almost completely gone, there being a few fibres remaining from its anterior portion. The laminae had been fractured and driven into the canal. One of the articular processes had also been driven into the canal. These were removed, and the wound closed leaving a small catgut drain. There was no decided improvement in his condition for six weeks after the operation. At this time he urinated voluntarily; two weeks later there was noticeable improvement in both sensation and motion in the thighs. This improvement has continued until now, about three years after operation. His thighs are practically normal, both as to motion and sensation; bladder and rectum act naturally and his general health is excellent. He can stand with support, and walk by having strong support on each side. His legs and feet, however, are still paralyzed both as to motion and sensation. At present he weighs nearly 200 pounds, and is quite comfortable, except for occasional pains in his legs.

New Orleans Polyclinic.—Seventeenth annual session opens November 2, 1903, and closes May 28, 1904. Physicians will find the Polyclinic an excellent means for posting themselves upon modern progress in all branches of medicine and surgery. The specialties are fully taught, including laboratory work. For further information, address, New Orleans Polyclinic, Post-office Box 797, New Orleans, La.

Spurious Dysmenorrhea.

In a paper prepared for the recent session of the American Surgical and Gynecological Association, after naming twenty-five varieties of spurious dysmenorrhea that are found mentioned in the text books of a former day, Dr. Henry T. Byford, of Chicago, calls attention to their disappearance therefrom, and makes a strong plea for a more rational treatment. Many supposed cases are spurious in character. These have been perpetuated by the physician and cured by the quack. The absurdity of the nasal cure was emphasized, and the cures referred to as spurious. Instances of menstruation in the male were quoted. The trend of the paper was to condemn writers for bringing the *symptom* into the foreground when it should be kept in the background, and for wasting their own time and that of their readers in ridiculous refinements and speculations.

Fibrous and Myxomatous Growths in Scrotum.

The case reported by Dr. E. A. Balloch, Washington, D. C., before the recent session of the Surgical and Gynecological Association, was that of a colored boy, who presented himself on December 9, 1902, with a greatly enlarged scrotum, reaching nearly to the knees. Family history negative; personal history threw no light on the case. No history of injury. Present trouble began eight years ago with painless enlargement of the scrotum, beginning at the upper part.

The scrotum was found to be free from fluid, although there was a pulpy, gelatinous feel to it. Both testicles and both cords could be made out and felt normal. Three growths were felt in the right side of the scrotum, separate and unattached. There was a keloid behind the right ear. The diagnosis of fibroid growths was based on the exclusion of syphilis, tuberculosis and malignant disease and on the theory that the presence of the keloid indicated a tendency to fibrosis.

Operation December 15, 1902, disclosed three fibrous growths. The upper one was attached to the tissues in the upper part of the scrotum, near the external ring; the other two presented no distinct points of attachment. The tunica was converted into a mass of myxomatous tissue. The patient recovered without incident and has been perfectly well ever since. The right testicle was removed accidentally in dissecting out the diseased tunica.

Pathologically the growths consisted of fibrous tissue, with areas of myxomatous and fatty degeneration. The tunica was entirely myxomatous. The testicle showed areas of beginning myxomatous change. The tumors weighed 38 oz. and the tunica 20 oz. The growths measured approximately 5 in. x 3 in. each.

The pathology of the growths was discussed at length and the paper closed with a resume of the literature of the subject, which showed that the tumors were unique, but one case at all resembling it having been reported.

The writer stated that there were numerous references to minute fibroid growths on the tunica vaginalis, following hydrocele or some injury, but no mass approaching this in size had as yet been reported.

Book Notices.

System of Physiologic Therapeutics. Edited by SOLOMON SOLIS COHEN, A. M., M. D., Senior Assistant Professor of Clinical Medicine, Jefferson Medical College, *Volume VIII. Rest, Mental Therapeutics, Suggestion.* By FRANCIS X. DERCUM, M. D., Ph. D., Professor of Nervous and Mental Diseases, Jefferson Medical College of Philadelphia, etc. Philadelphia. P. Blakiston's Son & Co. 1903. Cloth. 8vo. Pp. 332.

We wish we could so emphasize the value of this "System of Physiologic Therapeutics" as to lead every practitioner to read it. Much of the greatness of a man consists in the impression he makes and leaves upon those he meets. This "practical exposition of the methods, other than drug giving, useful for the prevention of disease and in the treatment of the sick" is one of the most important of therapeutic works published for the practitioner. This volume of the series deals with powerful therapeutic agents too much neglected in their application—*rest, mental therapeutics, and suggestion*. With reference to the influence of the mind, both in the causation and on the course of disease, we see every day illustrations in practice. Confidence in the physician and reliance upon his skill are wonderful helps to the cure of a patient. This agent—*suggestion*—involves all the principles of so-called hypnotism, faith cure, etc. The effort of the author is to remove this powerful

agent from the field of the fake, quack or charlatan, and to teach its methods to the regular doctor in order that he may honorably and scientifically make use of it whenever he deems it essential. There is scarcely a page of this volume that is not instructive reading for the doctor, which he can carry to the bedside for the benefit of his patient. The book is well indexed.

Practical Gynecology. *A Comprehensive Text-Book for Students and Physicians.* By E. E. MONTGOMERY, M. D. LL. D., Professor of Gynecology, Jefferson Medical College, etc. *Second Revised Edition.* With 539 Illustrations, the greater number of which have been drawn and engraved specially for this work, for the most part from original sources. Philadelphia: P. Blakiston's Son & Co. 1903. Cloth. 8vo. Pp. 900. Price, \$5 net.

The general "make up" of this volume is attractive. The text contains the clear descriptions of signs and symptoms which lead to correct diagnosis. The sections on microscopic conditions, on pathology, treatment, etc., are all well arranged and well expressed. Over 12 pages are devoted to points in diagnosis in general; a section of about 50 pages are given to methods of examination—pelvic and abdominal. Over 50 pages are occupied with gynecological therapeutics—local, medical and electrical. Then follow chapters on embryology, anatomy of the genito-urinary organs of woman, and physiology. After descriptions of malformations, etc., traumatisms are discussed at length. Inflammations in a general sense and of the vagina, cervix and body of the uterus are fully considered. A good chapter is on Deviations of the Pelvic Organs, as also on Genito-Urinary Hemorrhage and Ectopic Gestation. Tumors of each of the pelvic organs of the female are diagnosed, and lines of treatment in keeping with the latest advances are detailed. In short, this is a complete work on Gynecology, adapted alike to the wants of the medical student and of the practitioner. It would be difficult to make a criticism of the design or the contents of this work—viewing it from the standpoint of its purpose, as expressed in the title.

Johns Hopkins Hospital Reports. Vol. XI. Nos. 1-9. Paper. Large 8vo. Pp. 558. Baltimore: The Johns Hopkins Press. 1903.

This Volume contains a monograph on *Pneumothorax*—a Historical, Clinical and Experimental Study, by Chas. P. Emerson, A. B., M.

D., *Clinical Observations on Blood Pressure*, by Drs. Henry Wireman Cook and John Bradford Briggs—a synopsis of which article we have already published as one of those read at the session of the Medical Society of Virginia, last September; and the *Value of Tuberculin in Surgical Diagnosis*, by Dr. Martin P. Tinker. These papers are all based on original work, and the first two papers give interesting—in fact, exhaustive historical accounts leading up to the present day with reference to the subjects in hand. The Series of Volumes of the Johns Hopkins Hospital Reports—from first to last—have furnished an immense amount of valuable information based on original research.

Physician's Pocket Account Book. By J. J. TAYLOR, M. D. Published by "The Medical Council," Philadelphia, Pa. Bound in leather, with pocket and tuck. Size 4½x6½ inches. 200 pages. \$1.

This book is designed as a physician's complete *financial* record. As each account is made in ledger form, no posting into a ledger is required. Sufficient space is allowed to write name of party seen, date, and nature of service rendered. The hieroglyphic systems of most visiting lists have been ruled by courts as valueless in contesting accounts. This book has pages for "accounts brought forward," for "accounts of professional services," for "obstetric record," for "vaccination record;" for "record of deaths," and "cash account," with well arranged index pages. A number of valuable suggestions are given as to the best ways to make collections, etc. For the busy practitioner this book offers many advantages—saving much time in transferring accounts from visiting lists to ledgers.

Treatise on Orthopedic Surgery. By ROYAL WHITMAN, M. D., Lecturer on Orthopedic Surgery in College of Physicians and Surgeons of Columbia University, New York, etc. *Second Edition, Revised and Enlarged.* Illustrated with 507 Engravings. Lea Brothers & Co., Philadelphia and New York. 1903. Cloth. 8vo. Pp. 848. Price, \$5.50 net.

The additions found in this edition bring the work fully up to the rank of the standard authority on orthopedic surgery. The profusion of well-selected and well-executed illustrations are very helpful to the student or to the practitioner. Perhaps the most distinctive recent advance in this specialty of surgery relates to the prevention of deformity, and the author empha-

sizes this feature whenever the opportunity arises to discuss symptomatology of the incipient stages of disease. Perhaps Prof. Lorenz's recent demonstrations in certain lines of orthopedics have done most in directing professional attention to this special field of study. A feature of the recommendations of the author consists in the personal experience in the application of the principles of treatment laid down. The practitioner—whether of medicine or surgery—who carefully studies this book will derive many valuable hints, and he can scarcely afford to do without it in his library for frequent reference. He will almost daily need it in the rounds of a general practice. Ready references to subjects are greatly assisted by the quite complete index appended to the volume.

Practical Medical Series of Year Books. Under the General Editorial Charge of GUSTAVUS P. HEAD, M. D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School, etc. *Volume X. Skin and Venereal Diseases*, edited by WM. L. BAUM, M. D., Professor of Skin and Venereal Diseases, Chicago Post-Graduate Medical School; and *Nervous and Mental Diseases*, edited by HUGH T. PATRICK, M. D., Professor of Neurology in the Chicago Polyclinic, etc., with Collaboration of CHARLES L. MIX, A. B., M. D., Professor of General Medicine in Post-Graduate Medical School of Chicago, etc. *September*, 1903. Chicago: The Year Book, Publishers. Cloth. 12mo. Pp. 236. Price, \$1.25; or for the Ten Volumes a year, \$7.50.

Of the many year books, this is about the best published in that it comprises the year's progress in all departments of medicine and surgery. It is issued in ten volumes a year—each volume speaking of the advances in certain departments, as the book before us does regarding "Skin and Venereal Diseases"—about 100 pages—and "Nervous and Mental Diseases"—taking up about 130 pages. It is difficult to keep up even with the technicalities in neurology, etc., especially when we come to speak of the "anxiety neurosis"—*Ikathisia*—meaning an inability to sit down—is a new word; so is *stasobasophobia*—applied to a person who can neither stand up nor walk in a limited space. In fact, the new words brought out render a dictionary of a year ago useless, when one seeks their definition. But all such shows how vast an amount of literature is searched, classified, and brought down in compilation to the pages of a book of the size of the one under consideration. We cannot see how the general practi-

tioner can undertake to keep up with the day unless he takes and reads a series like this one.

Compend of Gynecology. By WILLIAM H. WELLS, M. D., Chief of Gynecological Staff of Mount Sinai Hospital, Philadelphia, etc. *Third Edition, Revised, Enlarged. With 145 Illustrations.* Philadelphia: P. Blakiston's Son & Co. 1903. Cloth. 12mo. Pp. 293. Price, 80 cents, net.

This No. 7 of the series of *Quiz Compend*s of the publishers does not undertake to follow the teachings of any one school, but condenses the methods used by the best instructors of gynecology throughout the country. This edition contains a section on the general therapeutics of gynecology, which adds materially to its usefulness as a students' review book for examinations. For the practitioner, it furnishes a great deal of important detail information, which he can readily examine into at short notice.

Infectious Diseases—Their Etiology, Diagnosis and Treatment. By G. H. ROGER, Professor Extraordinary in Faculty of Medicine of Paris, etc. *Translated by M. S. GABRIEL, M. D.* Illustrated with 43 Engravings. Lea Brothers & Co., New York and Philadelphia. 1903. Cloth. 8vo. Pp. 874. Price, \$5.75 net.

We regard this as one of the most valuable books for the general practitioner that has recently been issued from the press. It comprehends almost the entire scope of internal medicine and touches upon many of the principles underlying modern surgery as well. The author's opportunities for studying the infections include the hospitals of Paris under his charge, in which have occurred more than 10,000 cases during the period of five years. After studying the pathogenic agents, he passes to their distribution in nature, the conditions under which they attack man, their modes of invasion, and then he considers their influence upon the human economy, and the reaction of the latter upon the invaders. Questions of diagnosis, prognosis and treatment—both preventive and curative—receive full space. It may be of special interest to note that about 220 pages are devoted to the therapeutics of infectious diseases. The work is not so much a treatise in detail upon each of the infectious diseases as it is upon the general, practical principles that lead to their diagnosis, a statement of their probable results, and a scientific line of treatment—such especially as has been confirm-

ed by experience. It is the book for the practitioner—not for the college student. It has a good index.

The Acid Auto-Intoxications. Part IV. of Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition. By PROF. DR. CARL VON NOORDEN, Physician in Chief to the City Hospital, Frankfurt a. M. New York: E. B. Treat & Co. 1903. Cloth. Small 8vo. Pp. 80. Price, 50 cents.

This is one of a series of Monographs by the author of this book, edited by Dr. Boardman Reed, Professor of Diseases of the Gastro Intestinal Tract, etc., Temple College, Philadelphia. The points brought out prominently are (1) the numerous forms or manifestations of self-poisoning; (2) the acid forms are among the gravest of them; and (3) those special perversions of metabolism resulting in the excessive production of oxybutyric acid, diacetic acid and acetone, which so greatly endanger diabetics and also complicate at times other diseases more or less seriously, are of the utmost practical importance. It is a monograph for the practitioner, from which he will derive many suggestions as he reads. Even so brief a work would be made more valuable if it had an index. *Obesity*, *Nephritis* and *Colitis* are the titles of the titles of the three preceding parts, which we have noticed as issued.

Normal Histology. One of the "Medical Epitome Series." By JOHN R. WATHEN, A. B., M. D. Series edited by V. C. PEDERSEN, A. M., M. D., Instructor in Surgery, etc., New York Polyclinic Medical School and Hospital, etc. *Illustrated with 114 Engravings.* Lea Brothers & Co., Philadelphia and New York. 1903. Cloth. 12mo. Pp. 229. Price, \$1 net.

The essential facts of histology are well epitomized by the author, which renders this book valuable for review work in preparing for examinations. It also serves as a book of reference for a fact, without discussion of theories or the statement of suppositions. The most important points are well tabulated for the student. It contains a special chapter on the technique of preparing and staining tissues. In fact, the amount of well arranged information it contains is amazing—making much more than a compend. It also includes references to embryology, which greatly aid in a correct understanding of histology, and a better appreciation of pathology. Questions are appended to each

chapter for review purposes, and an index is added to help ready reference to the page.

Editorial.

Butler, Penn., Epidemic of Typhoid Fever.

So far as we have been able to ascertain, typhoid fever, which has been raging at Butler, Penn., for the past six weeks or more, far surpasses any typhoid epidemic of recent years. If the present reports are correct, the famous epidemic at Plymouth, Penn., in 1885, was not greater, if as great. It is a curious coincidence that both of these remarkable epidemics should have occurred in Pennsylvania, the former mentioned having been in the western, and the latter in the eastern section of that State.

Plymouth had a population of about 8,000 people at the time of its epidemic, and in all about 1,200 persons were attacked; while Butler has a population of about 12,000, and apparently reliable reports claim that at least 1,500 persons have been sick to this time—with the disease not yet entirely checked. The Plymouth epidemic was found to be due to the water supply, and (quoting from the *N. Y. and Phila. Med. Jour.*, December 5, 1903) "there can be no doubt that polluted water supply has been directly responsible for the outbreak of the disease. It is reported that drainage polluted the water supply through gravity, cases of typhoid fever having been located on a hill above a dam, into which polluted water emptied, and was finally pumped into the service pipes." Later reports tend to confirm the belief that infected water has been the cause of the trouble. The mortality rate thus far has probably been not more than four or five per cent.

The Psychologic Factor in Medicine.

We cannot shut our eyes to the fact that quacks and charlatans—that osteopaths, "faith cures doctors," magnetic healers, "Christian scientists," *et id omne genus*—at times show up cured cases that physicians had failed to relieve. When we analyze the successful treatment in such cases, we are forced to the conclusion that the result comes about by the influence of mind upon mind. It may be a species of mesmerism or of hypnotism that so acts upon the patient as

to bring about the desired result. But all of this is but the wonderful power of *suggestion* by one who has the strength of will to leave a decided impression upon the mind of the one under treatment.

We see this power of suggestion exercised in many every-day affairs of life—by the merchant, the banker, the lawyer, etc. We see it oftentimes in crowds where one man of resolute courage and indomitable will power, coming to the front at the proper moment, quiets a tumult by his voice of command. We recognize it at times in the tones of sympathetic assurance that come from one in whom we confide.

This same principle—of first securing the confidence of the patient and then working upon the line of suggestion—is the one that has made many a physician influential in the sick room, when, in reality, a man of higher scientific attainments and a better practical skill has failed to accomplish a like degree of good. We too often forget that man is impressionable—especially the sick man. And we go on treating him with drugs and mechanical measures—neglecting the application of psycho-therapeutics, and find out at the end that he is not well when we see no reason for his want of recovery, and in a state of self-discouragement we give up the case. Another doctor comes along and adopts practically the same line of medicinal or mechanical treatment, but he adds that wonderfully recuperative influence of *suggestion*, and the patient gets well. And that patient goes out among his friends to sound the praises of the last doctor he had—even to the injury, it may be, of the former doctor, whom all the profession probably recognizes as a cleverer and better informed physician.

It is well for us to recognize the good results of the osteopath, the "spiritualist," the "Christian scientist," the "faith healers," the "magnetic healers," or whatever else they may be called, among certain classes of cases, and adopt such measures as they may use with the strong, impressionable patient. Such "healers," etc., may be fakes or quacks or charlatans, but as we recognize their growing popularity because of results they herald, and certificates of cure they secure—certificates that are genuine as to the parties signing them—it is time for us as scientific practitioners to stop for a moment "to learn from our enemies."

A number of articles have appeared in the medical journals from reputable practitioners during recent years and months pointing out the

value in the sick room of psycho-therapeutics, and calling attention to the fact that our regular medical colleges too much ignore its teaching in their curricula. Whether such teaching should be in the undergraduate or in the post-graduate course may be a matter for consideration. But that every physician who is to go out among the people should be made acquainted with such methods of cure, and that the subject of psycho-therapeutics should be included in the diploma of the doctor ready for practice, there is in our mind no shadow of doubt.

Unveiling of Statue of Hunter McGuire, M. D., LL. D.

Dr. Hunter Holmes McGuire died September, 1900. Soon afterwards, the "Hunter McGuire Memorial Association" was organized—the officers being Miss Fannie B. Scott, President; Mrs. Stephen Putney and Miss Cally Ryland, Secretaries; Mrs. James R. Gordon, Treasurer, and a large number of the most influential ladies of this State as members. These ladies secured subscriptions of over \$7,000, which they contributed in the form of the heroic size statue of bronze which was unveiled on Capitol Square, Richmond, on January 7, 1904. The statue represents Dr. McGuire seated in an arm chair. It is in the northern portion of Square, to the left of the statue of the immortalized "Stonewall" Jackson, of whose Confederate army corps Dr. McGuire was medical director. The unveiling of the statue was a notable event. Rev. Dr. Joseph P. Smith, chaplain of the same corps, offered the dedicatory prayer. Judge George L. Christian, Richmond, on the part of the Memorial Association, made the presentation address. The gift was gracefully accepted for the State by Governor Montague. Major Holmes Conrad, of Winchester, Va., who served with Dr. McGuire on the staff of General Thomas J. Jackson, delivered the oration of the occasion. Master Hunter Holmes McGuire, a grandson of the famous surgeon, unveiled the statue. A salute of thirteen guns was fired by the Richmond Howitzers. All of the military of the city were in the procession, followed by Lee and Pickett Camps, respectively. The University College of Medicine, Richmond, which was practically founded by Dr. McGuire, and of which he was president till his death, and the Medical College of Virginia, in which he had been professor of surgery, suspended exercises for the day, and the professors and students marched in column to

the place of unveiling. In the immense throng of spectators were numerous men of distinction in the profession and other distinguished citizens from all parts of the State.

Hygeia Hospital, Richmond, Va.

This private sanatorium for medical diseases only, under the charge of Dr. J. Allison Hodges, has been equipped with thoroughly up-to-date appliances, etc., and opened for the reception of patients. Parties afflicted with contagious or tubercular diseases and insane cases are not admitted. An assistant physician rooms in the remodelled and enlarged building (101 West Grace street), and trained nurses are in charge of patients. In connection with this hospital, a system of baths, devised by Dr. Simon Barush, of New York, for the treatment of rheumatism, gout, dropsies, neurasthenia, spinal diseases, etc., has been established, under the charge of two superintendents, who are experts—a lady and a gentleman. Such of the profession as may prescribe these baths for therapeutic purposes are privileged to do so, with the assurance that their patients will be solely under their care during the time of treatment. These baths are eliminant as well as stimulant and tonic in their action, and are capable of many modifications—adaptable to the case under treatment. The Nauheim baths for chronic heart disease, and the different forms of vapor, electric or electric light baths, are allowed to be given only on a physician's prescription. That there was need for such a sanatorium is proven by the fact that many of the rooms are already occupied by patients from all parts of this and other States. For terms, etc., address Dr. J. Allison Hodges, Richmond, Va.

Reciprocities by Virginia State Board of Medical Examiners.

During the session in Lynchburg during December, 1903, it was "Resolved, That the Virginia State Board of Medical Examiners will reciprocate with Boards of other States; but deem it necessary for its own protection that every applicant claiming such recognition shall, in person, present, with his petition, a diploma from a reputable college, together with an attested certificate from a State Medical Examining Board having equal requirements with the Virginia Board, and which is willing and authorized to give similar recognition to those who hold certificates of the Virginia State Board of

Medical Examiners. Applicants complying with the above conditions and paying the usual fee shall be granted a certificate."

The next meeting of the Board will convene at Richmond Tuesday, 8 P. M., June 21, 1904, for routine business. Examinations will begin promptly at 9 A. M. June 22, 1904, and will continue through the 23d and 24th. Applicants for examination will find the Secretary, Dr. R. S. Martin, of Stuart, Va., in the hall in which the Board is to assemble nearly all of Tuesday for the purpose of registering applicants, etc.

The report of results of the December examinations will appear as usual in this journal as soon as the examiners shall have rated their papers, etc.

Physicians Wanted in U. S. Civil Service in Philippines.

On January 27 and 28, 1904, examinations will be held for eligibles from which to select physicians for the Philippine service, at salaries ranging from \$1,200 to 1,800 per annum. Age limit 20 to 40 years.

Appointees are expected to pay their travelling expenses from their places of residence to Manila, but if it is found necessary for the Philippine Government to bear any part of such travelling expenses 10 per cent. of the monthly salary of the employee will be retained until the amount retained is equal to the amount borne by the Government. At the expiration of two years' satisfactory service the actual and necessary travelling expenses borne by an employee in proceeding to Manila will be refunded to him. He will be allowed half salary from the date of embarkation and full salary from the date of his arrival in the islands, provided that he proceeds directly to the islands; otherwise, he will be allowed half salary for such time only as is ordinarily required to perform the journey by the route directed. The half salary allowed him from the date of embarkation until his arrival in the islands will not be paid until after two years of satisfactory service. Each employee will be required to sign an agreement to serve at least two years in the Philippines unless sooner released by the civil governor or proper head of Department.

A person who has been employed continuously in the Philippine service for three years or more is, upon his request when retiring from that service, furnished transportation from

Manila to San Francisco, and is allowed half salary for thirty days in addition to full salary for the period which he may be granted as leave of absence.

Examinations will be on the following subjects, weighed as follows:

Subjects.	Weights.
1. Letter-writing	5
2. Anatomy and physiology.....	10
3. Chemistry and materia medica.....	10
4. Surgery and surgical pathology.....	20
5. Practice and special pathology.....	20
6. Bacteriology and hygiene.....	15
7. Obstetrics and gynecology.....	10
8. Experience (rated on application)....	10
Total	100

Questions on the fifth subject will be principally upon tropical diseases. In the sixth subject, the principles of bacteriology and hygiene as applied to the study of and prophylaxis in diseases incident to the tropics will be especially considered.

At least one year's experience in hospital work, or in the Philippine Islands as assistant surgeon in the United States Army, is prerequisite.

Each applicant must submit to the examiner, on the day he is examined, a photograph, not more than three years old, of himself, which will be filed with his examination papers. An unmounted photograph is preferred. The date, place, and kind of examination, the examination number, and the year in which the photograph was taken should be indicated on the photograph.

This examination is open to all U. S. citizens who comply with these requirements, and offers an excellent opportunity to enter a service which has many attractive features and to see a most interesting part of the world. China and Japan are near at hand and are favorite places to visit during vacations. The Philippine service is classified, and the law contemplates promotions on the basis of merit from the lowest to the highest positions. The climate is good and nearly all of the employees are in excellent health.

Competitors will be rated according to their qualifications as shown in their examination papers.

Persons who desire to compete should at once apply to the U. S. Civil Service Commission.

Washington, D. C., for Application Forms 2 and 375 which should be properly executed and filed with the Commission at Washington.

A complete list of the places in each State, etc., at which the examinations will be held is furnished with the application forms. No request will be granted for examination on any other date or at any other place than those named in the form.

International Congress of Otology.

The Seventh International Congress of Otolologists will be held at Bordeaux, France, August 1-4, 1904, under the patronage of the Minister of Public Instruction. The official languages of the Congress will be French, English, German and Italian. Membership fee—25 francs—should be sent to the treasurer, Dr. Lannois, rue Emile-Zola, 14, Lyon, France. Parties proposing to read papers should send titles of the same to the Secretary General, Dr. Lermoyez, rue LaBoetie, 20 bis, Paris, France, by the first of May, 1904.

Tyree's Antiseptic Powder, according to the testimony of many of the ablest practitioners of this country, is an invaluable antiseptic, deodorizer and disinfectant—acting especially well in acute conditions existing in vaginitis, leucorrhœa and pruritis. Indeed, it is spoken of by some "as near a specific" as has been found for leucorrhœa, gonorrhœal infections, etc. The powder is composed of sodium borate, alum, a trace of carbolic acid, glycerin and the crystallized principles of thyme, eucalyptus, gaultheria and mentha. The usual method of use is to dissolve two to three drachms in a pint of water, and use it as a vaginal douche from a fountain syringe. In fact, it can be used freely in any strength, at any time, and in any case. It is preferable to mercuric bichloride solution because it is devoid of any element of danger. Dr. W. M. Gray, Microscopist to the Army Medical Museum, filled some test tubes with a solution of the powder—1 part to 50 of water, and charged with peptonized beef broth. The solutions were then inoculated with the anthrax bacillus and with the staphylococci of pus, and the tubes were placed in an incubator for 48 hours at a temperature of 39° C. In solutions of one in ten to one in fifty, no development of bacteria was found. It is a thoroughly ethical preparation and possesses great merit.

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THERAPEUTIC VALUE OF INTRA-VENOUS INJECTIONS OF COLLARGOL IN SEPTIC AFFECTIONS.*

By GEORGE TUCKER HARRISON, M. A., M. D., New York.

We owe it to the indefatigable researches of B. Crede, of Dresden, that silver was introduced as a valuable therapeutical resource in the treatment of septic affections. As metallic silver was insoluble, and its salt on account of certain chemical properties inapplicable, Crede made it his endeavor to procure the silver in a condition which should be soluble in water. Now, in 1896, at Crede's suggestion, in the chemical manufacturing establishment of Von Heyden, in Dresden, Radbuel succeeded in producing such a soluble silver in a colloid way—the *collargolum*—which met all requirements; that is, it was soluble, not poisonous, and was bactericidal.

The first method of application was in the form of the well known "unguentum Crede" containing 15 per cent. of the collargol. This mode of application was recommended by the circumstance that it could be made available without the slightest difficulty in ordinary practice. Another mode of application was by the stomach, in the form of silver pills. The method of inunction has been praised by some, and by others has been pronounced absolutely worthless. The subcutaneous method is altogether uncertain, and should not be used.

As early as 1897, Crede suggested the exhibition of the collargol in the form of intra-venous injection. In a paper read before the Society of Physics and Medicine, in Dresden, 24th of January, 1903, upon this theme by Dr. Herman Schmidt—and to which I acknowledge my great

indebtedness in the preparation of this—we are told that Crede applied this method of incorporation in man after Prof. Dickenhoff, of the Veterinary University of Berlin, and Prof. Roder, of the Veterinary University of Dresden, and others had demonstrated that the intra-venous injection of large domestic animals suffering with septic affections were absolutely free from danger, and at the same time that they had an almost specific influence in certain septic diseases. The first intra-venous injections in man were made in cases regarded as almost hopeless, and yet the complete freedom from danger in the method was shown.

The collargol as now supplied by the chemical house of Von Heyden is in the form of scales and granules of a silver lustre which dissolve easily and completely in distilled or pure water in the proportion of one to twenty. When kept, it is not subject to change from heat or cold, as a concentrated solution may be preserved for a long time without change or the formation of a deposit, nor is it necessary to protect it from the light or heat. The solution is so little sensitive to light that it may be even boiled without losing its bactericidal properties, if we may judge by its effect on the growth of bacteria outside of the human body. For intra-venous injection, however, it is not necessary to boil the solution; it is sufficient to dissolve the collargolum in water that has been boiled or that is absolutely pure. The agents in this country are Schering & Glatz, New York.

As the title of my paper implies, I am only concerned about the effects of the intra-venous injections, and shall not stop to discuss the other modes of applying the silver. Before mentioning the cases in which I have had the opportunity of studying the effects of the remedy, permit me to narrate a few of the observations of Dr. Schmidt: "*Appendicitis Perforativa, Peritonitis Diffusa*. Laborer, 18 years old, in good health until few days ago; sudden collapse; operation immediately after his reception into the

*Read before the Medical Society of Virginia during its thirty-fourth annual session, held at Roanoke, Va., September 15-17, 1903.

hospital. Gangrenous vermiform appendix. Meteorism, pulse scarcely perceptible, cold sweat. Temperature 38.5° C., pulse 120—a 1 per cent. solution of collargol poured into the free abdominal cavity, two drams; resection of the appendix. Intra-venous collargol injection of 0.05 c. c., and infusion of normal salt solution during the operation. Already after a few hours, surprising improvement; on the next day no fever and general condition good; healing smooth. Although such cases do now and then get well, under other conditions, yet we have never observed such a quick and significant improvement.

"Polyarthriti Septica. Woman 27 years of age. On 10th of February, ill with febrile angina; on 7th of March disease of several large joints; endo-carditis; very bad general condition; temperature morning 38.0° C.; pulse 140; evening temperature 10.0° C.; pulse 170—usual treatment. On 13th of March, condition hopeless; collargol injection. Some hours afterwards improvement of all the phenomena for 36 hours. On the second and fourth days respectively, collargol injections again; thereupon good and rapid convalescence; now, a year after this illness, she is in best condition."

According to Dr. Schmidt, Dr. Johannes Muller, gives in the German Medical Weekly, (*Deutsche Medizinische Wochenschrift*) a report upon twenty cases of different forms of disease which he treated according to the intra-venous method with striking success. His experiences embrace a case of erysipelas bullosum, one of meningitis cerebrospinalis epidemica, one of erysipelas phlegmonosum, three of perimetritis, four of mastitis, one of lymphangitis, two of panarthriti, three of phlegmons, one of acute articular rheumatism, two cases of pleuritis exudative, an erysipelas of the face, a case of appendicitis, a severe general peritonitis, a meningitis, finally three cases of sepsis. It would contradict all human experience and be highly unscientific, to assume that the successful issue in these cases could by any possibility, be the result of a fortuitous concatenation of circumstances.

The first of my cases which I shall cite for you occurred in the person of a young married woman, who had had an abortion procured, according to her own confession. She volunteered the statement that the man who attended her had not used any antiseptic precautions.

When she came under the care of Dr. Gess-

ner Harrison, she gave evidence of a severe form of pyæmia. She had weak pulse, remittent type of fever, the right knee joint very much swollen with extensive effusion, and, withal, an abscess of the gluteal region. As ordinary treatment produced no effect and the patient was growing progressively worse, I suggested to Dr. Gessner Harrison, whom I met in consultation, that it would be well to use the intra-venous injection of collargolum. This was accordingly done. The next day the improvement was manifest, not only as shown by temperature and pulse, but also by the greatly altered, for the better, general condition—the patient herself expressing gratification at the cheerful and hopeful sensations of which she was now conscious. In the following two or three weeks, Dr. G. Harrison gave two collargol intra-venous injections. The fever continued, as a large abscess developed in the thigh.

During Dr. Harrison's absence from the city in August, I incised this abscess in the middle of the thigh and evacuated an immense quantity of pus. The incision was made on the outer side of the thigh and a counter opening on the inner side. Through and through drainage with plain aseptic gauze was effected; cavity filled and irrigated with peroxide of hydrogen. When the gauze was taken out of the cavity which had been the seat of the abscess, on the following day, I was surprised to find that not a drop of pus came, but only a serous or lymph-like fluid; and from that time on, a similar condition existed. Such rapid recovery after the evacuation of an abscess of that size I had before never witnessed—the effusion in the knee joint having nearly disappeared, although there was yet some stiffness; otherwise the condition of the patient was excellent. The knee-joint affection was evidently one of the septic arthritis.

A comparison could be made in this patient between the treatment of an abscess before the use of the collargol and after, by the different results of treatment of the gluteal abscess as compared with that of the abscess of the thigh. Again and again the patient, a most intelligent woman, remarked how perfectly wonderful it was that the abscess should have been healed up so rapidly; it seemed like a work of magic. To appreciate the splendid results achieved by the silver solution in this case, it would be necessary to bear in mind the clinical picture at the time of the exhibition of the remedy—the rapid pulse, the elevated temperature, the extreme

emaciation, the dreadful paroxysmal pains in the lumbar and sacral region, the sensitive septic right knee joint and the swollen right thigh.

The next case to which I would call your attention occurred in my service at the New York Infant Asylum, and has been copied for me from the records by the Resident Physician, Dr. George T. Myers, of Norfolk, Va., for whose courtesy I beg to express my thanks. At my request, Dr. Myers recorded the impression made on him by the effects of this remedy.

"Report of a Case of Puerperal Sepsis. Mrs. G.—age 27, Para-2; personal history good, robust in appearance. Her first confinement two years previously was difficult; the child delivered by forceps, was still born. Patient was taken in labor, June 9, 1903, at 5 P. M. June 10th, 12 o'clock noon, cervix fully dilated, antero posterior diameter contracted. Podalic version performed by Dr. Harrison; child delivered still born. Placenta expelled by Crede's method. Right laceration of cervix, medium laceration of the perineum, extending high up into right vaginal sulcus. Primary repair of perineum by Dr. Myers, at request of Dr. Harrison, catgut inside and silk-worm gut externally. Sterile vulva pads applied; put to bed an hour after delivery. Two hours after, temperature 97° F.; pulse 128; respiration 38; patient resting quietly. First day after confinement lochia rubra profuse, temperature 98.8° F.; pulse 130; respiration 34. Second day, temperature 101.2° F.; pulse 100; respiration 24, 5 P. M. Blood examination negative so far as plasmodium of malaria concerned. Bowels moved at 6 P. M. from calomel, 4 grains given the night before, in fractional doses, followed by Epsom salts in morning. Breast pumped and binder applied—there being no engorgement or inflammation.

From the 14th to 21st of June, the temperature at 5 P. M. was 100.8° F.; pulse 94; respiration 28, with slight morning remissions, when the chart showed temperature 99.4° F.; pulse 88; respiration 22. On the 21st, at 6 P. M., temperature 101.4° F.; pulse 92; respiration 20. On 22d, 6 A. M., temperature 102.8° F.; pulse 112; respiration 28. On 23d day, 6 A. M., temperature 100.4° F.; pulse 88; respiration 24. Blood examination negative so far as plasmodium concerned. At 6 P. M., temperature 104.4° F.; pulse 120; respiration 36. Lochia slight and very little color; Lysol vaginal douch 1 per cent. solution—two quarts,

which returned clear; this was repeated *ter in die* returning clear each time. On 24th, at 6 A. M., temperature 99.8° F.; pulse 78; respiration 26. At 6 P. M., temperature 101.6° F.; pulse 88; respiration 20. On 25th, temperature at 6 A. M., 99.4° F.; pulse 80; respiration 20. At 6 P. M., temperature 100° F.; pulse 94; respiration 28.

From the 25th to 28th of June, at 6 A. M., temperature 99.8° F.; pulse 86; respiration 20; at 6 P. M., temperature 101°; pulse 96; respiration 28; on 28th, 6 P. M., temperature 101.8° F.; pulse 108, respiration 28. From 28th of June to July 15th, at 6 P. M., temperature 101.8° F.; pulse 110; respiration 32, with remissions: at 6 A. M., temperature 99.4° F.; pulse 88; respiration 24.

On 16th and 17th July respectively, at 6 A. M., temperature 100° F.; pulse 80; respiration 20; at 6 P. M., temperature 103.4° F.; pulse 100; respiration 29; on 18th, temperature at 6 A. M., 98.6° F.; pulse 72; respiration 28; at 6 P. M., temperature 101.4° F.; pulse 76; respiration 24. From the 18th to 28th of July the condition showed little change. On 28th of July, 6 A. M., temperature 102.8° F.; pulse 96; respiration 28; at 6 P. M., temperature 103° F.; pulse 100; respiration 28.

"The patient was extremely emaciated and very weak. Vaginal examination made by Dr. Harrison revealed the existence of decided exudation in the right broad ligament—in a word, a case of parametritis; uterus and appendages sensitive upon palpation, pain extending down right thigh. At 6:30 P. M., Dr. Harrison, assisted by Dr. Myers, gave an intra-venous injection of collargol, administering 30 minims of a 5 per cent. solution, using one of the veins of the back of the hand. The temperature at the time of the exhibition of the collargol was 103.4° F.; pulse 120; respiration 34. Three hours and a half after the intra-venous injection, the temperature had dropped to 100° F.; pulse 80; respiration 24. Pain in right leg had ceased; the patient's general condition was much improved; she expressed herself as feeling well enough to get out of bed and go home. On 29th of July, 5 P. M., temperature 99.4° F.; pulse 84; respiration 20. From this date until the 6th of August, the temperature, etc., remained as follows: Temperature 98° F.; pulse 80; respiration 20, when the patient was discharged cured and left the hospital.

In conclusion, I will state that the patient

received stimulants, such as strychnia, whiskey, quinine and tinc. ferri chloridi. In my experience at the New York Hospital with puerperal sepsis, treated by curettage and the various intra-uterine douches, I have never seen such brilliant results as followed in this case, after the administration of collargolum.

(Signed) GEORGE THOMAS MYERS,
Resident Physician, etc."

In the recent number of the *Medicinische Wochenschrift*, the distinguished Professor of Gynecology, at the University of Halle, Prof. Fehling declares that this method has given as good, if not better results, than any other method of treatment; and while it cannot be regarded as a specific, it is nevertheless a valuable weapon in the treatment of the disease. In his experience, 50 per cent. of the severe cases terminated favorably. Fehling, I am sure, rather under-estimated than over-estimated the superiority of this treatment. In the case I just narrated the improvement manifested was at an earlier period than usual.

My experience accords with that of Dr. Schmidt, that the effect of the remedy begins to show itself, as a rule, four to six hours after the injection. The bad symptoms then begin to show an amelioration; restlessness, headache, a blotted condition of the sensorium, give place to a brighter appearance of the sick. The appetite returns and sleep may be wooed. Says Dr. Schmidt, "When we are dealing with cases which are complicated by a primary abscess formation, we will observe generally a plain and permanent improvement of the general condition, although often not very marked; but temperature and pulse will remain uniformly or remittently high, and only a little influenced until the pus is evacuated."

With reference to the technique of the intra-venous injection as a matter of convenience the injection is made into the median vein of the arm, usually the left. The patient is brought to the side of the bed and the arm allowed to hang down to produce a venous stasis. After the lapse of a few minutes, a few circular turns of the bandage are carried around the arm above the elbow to bring the vein into prominence. Instead of the median vein, one of the veins of the back of the hand may be chosen, if it is quite prominent. The field of operation is first of all thoroughly disinfected and the injection made by the hypodermic syringe.

I use a metallic one, which is, as a matter of

course, sterilized by boiling before being employed. In some very severe cases in which a larger quantity of the collargolum is to be injected, a syringe holding 5 to 10 c. c. , while an assistant holds the arm steadily—previously sterilized by boiling—is stuck into the lumen of the vein, through the skin, being carried in the longitudinal direction. That the point of the needle is in the lumen of the vein, is immediately shown by the fact that blood regurgitates out of the free end of the needle. As soon as this takes place, the barrel is screwed on to the needle; the piston is drawn back slightly to carry any air above; the arm is brought into the horizontal position, the constricting bandage is cut and injection slowly takes place. Before the injection is made, it is well to draw back the point of the needle a fraction, to be sure that the wall of the vein has not been stuck through. The injection is made very slowly, every five or ten seconds the piston being shoved forward. To avoid the introduction of air, the last few drops should not be forced in. After the needle is withdrawn, a simple bandage is applied—a piece of plain aseptic gauze being laid on the wound and held in place by a bandage. In the case of a very anæmic, cachetic or fat person, if the vein is not prominent after constriction, it may be exposed by an incision over it and the injection then given as above described.

With reference to the amount of collargol to be used, I have prepared a 5 per cent. solution and inject my hypodermic syringe full. In severe cases, a weaker solution may be used and a larger quantity injected. I use one of William R. Warner's syringes, which are metallic and can readily be sterilized. Parke, Davis & Co. and other manufacturers make similar instruments.

A very interesting question relates to the mode of action of the silver. Many theories have been advanced, but its true explanation, I believe, is the one which Schmidt advocates, and that is the inhibitory action of the silver on bacterial growth.

To sum up, a sufficient array of facts have been brought forward within the past few years, by Crede, Schmidt, Muller, Fischer, Schrage, Winkel, Klotz and Fehling, and my experience confirms absolutely the correctness of the testimony, which goes to prove, beyond the shadow of a doubt, that the intra-venous injection of collargol is the best therapeutic resource at our

command in the treatment of septic diseases. One of the best recommendations of the method of treatment is its entire freedom from danger.

SOME EXPERIMENTS AND CONCLUSIONS IN HYPNOTIC THERAPEUTICS.*

By W. H. WALLACE, M. D., Disputanta, Va.

My attention was first called to hypnotism in a medical way in 1898. In the summer of that year I met a lady who assured me she was a natural born "magnetic healer." She affirmed that by a few strokes of her hand she could put her husband (who was an invalid) into a sound sleep. He was subject to various neurotic pains, which she could always control by stroking. Numbers of her friends assured me they could feel a peculiar thrill when she touched them. I had never heard hypnotism mentioned in my medical course, and had always considered it a humbug; but here were a number of reliable people whose word was not to be questioned, who assured me they could feel *something* pass from this lady's hand to their own. What was it? Animal magnetism, as she asserted, or hypnotic suggestion?

It was two years later that I began some experiments on my own account. My wife was affected with pains along the course of the sciatic nerve, and one night I said carelessly, "Oh, I can stop that in two minutes." I massaged both nerves lightly and told her her pain was gone; she moved the limb and felt no pain. She was not nearly so much surprised as I was.

From this I concluded that hypnotism was not all humbug, and so I purchased a good set of books on the subject and went to work to investigate more thoroughly. I have been thus prolix to show you that it was no hypnotic grandstand play that brought me to a study of the subject, and that at the beginning I was anything but prepossessed in its favor.

Following the instructions of Yerkes, of Harvard, I could readily hypnotize hens and discovered that some were more easily influenced than others.

I met a young lady who told me she had been

hypnotized several times, and I had no difficulty in putting her in the rigid, so-called cataleptic state. I then began to use it freely as a means of relieving pain in all suitable cases, neurotic headaches, insomnia, and all kinds of obscure functional nervous troubles, and as an aid to hasten the effects of chloroform in anesthesia. I was successful in stopping night sweats of phthisis, and in putting a patient (who has an idiosyncrasy for morphia) to sleep during the agonizing crisis of locomotor ataxia.

Now, I wish to call attention to five remarkable cases before attempting to draw conclusions:

Mrs. G., aged 53, married, no children, had been an invalid for twenty years when she first came under my care, and had all the clinical symptoms of phthisis and a bountiful supply of tubercular bacilli in her sputum. She was very weak, had precordial pains and could not sleep. I had exhausted the pharmacopeia in endeavoring to give her rest. It occurred to me one evening that this would be a heroic test for hypnotism. I put her in a comfortable position, and in ten minutes I had her sleeping soundly and she slept all night. As long as she lived I could make her comfortable by a few strokes of my hand and a few firm words of suggestion or command.

Her husband suffers from locomotor ataxia, and has an idiosyncrasy for morphine, which crazes him. I had run the gamut of anodynes in his case when the crisis was on, and had given him very little relief. In his case I used a revolving mirror, fixing the light behind him and getting the mirror in such position that it would flash the rays of light in his eyes. He was in such pain that his cries could be heard a block away. To quiet his craving for something to take I gave him 5 grains of bromide soda, and fixed his attention on the mirror, explaining to him that the rays of light would paralyze the ocular nerves and so pass on into the brain and he would soon sleep and be free from pain. Difficult as he was to control, in fifteen minutes he was sound asleep, and he slept for two hours. I then put him asleep again, and he slept all night without rousing.

In the room with this patient was a half-grown puppy, and the colored nurse called my attention to him just as I had got my patient asleep. The puppy had been attracted by the bright revolving mirror, and when I looked at him he was blinking and unsteady on his legs.

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and in a couple of minutes fell over against the hot stove, which wakened him up.

The next case I wish to speak of was a stout old lady of 62. She suffers with valvular heart trouble, and has asthmatic attacks at times. She became frightened and precipitated an attack one day, while I was away. When I saw her some three hours later, she had the most irregular pulse I ever felt, and had an abiding fear that her end was near. I got her to bed, and with a few quiet strokes over the temples and appropriate suggestions she went asleep, and now after some nine months has not had a recurrence.

My next case worthy of note was one of delirium tremens. Mr. M., a married man and a farmer had at one time been a pillar of the church, but like many other pillars, had fallen. He always seemed to have it on his mind, however, and when drunk that was his chief grief. When I went to see him, he was in a particularly bad fix; horses were running away with him and deacons were putting him out of church. He would not take medicine, nor allow me to use a hypodermic, and he was too powerful a man to think of using force with; so I decided to try hypnotism. It was out of the question to try ordinary methods, because I could not hold his attention; so assuming a tragic air I shouted at him, "Don't you see the the water around your feet—they are trying to drown you—get up on the bed, quick!" He took the suggestion literally, and seemed in abject terror of the water. I was then able to control him, and in half or three-quarters of an hour had him asleep. I went home hoping to hold him till morning, but he awoke in two hours—much more rational though—and in a couple of days was over his attack. He had another spell six months later and committed suicide.

My fifth case was a young Bohemian, who came to me from Pennsylvania with some obscure nervous trouble. He had been to see several specialists and was growing progressively worse. He had vague pains in the calves of his legs or thighs, weak back, was unable to work, and had constant headache and roaring in his ears. Strange to say, none had thought to examine his ears; and I had been treating him for two weeks before it occurred to me to look for impacted cerumen. Both auditory canals were packed full, and how he could hear so well with them in that condition is a mystery to me.

I syringed them out, and thought I had solved the riddle of his case, but in a few days he began to grow worse. I had his eyes examined and his vision was 20-20; no trouble there. I had been using electricity, superheated hot air to spine, and cold douches. As a last resort I tried notism and in ten days I had him out in the field at work. Of course I gave him tonics in conjunction with other treatment; but the fact remains—he did not commence to mend till after I had hypnotized him several times.

I have thus briefly run over these cases to show effects, or results, rather. I will now try to draw some conclusions. I am not quite prepared at this time to follow the latest teaching as to the action of or cause of hypnotic sleep. Nearly all writers claim that suggestion is all there is to it. I cannot believe this. I have hypnotized chickens by holding their feet, laying them on a board and putting a grain of corn in front of their beak. As I stated, I involuntarily put a puppy to sleep with a revolving mirror. To my mind, the whole keynote of the phenomena is *concentration*—suggestion only helping to hold the mind, or concentrating it.

It would not surprise me at all to find the students of the science (if I may so call it), at some later date, go back to the teaching of Mesmer, and show that there is a psychic force that produces the phenomena we call hypnotic sleep.

I do claim (and believe that further research will bear me out) that hypnotism has a definite physiological action, as much so as any drug of the pharmacopeia. So far as I have been able to find out, no one has ever advanced this theory, and thereby hangs the secret of much of the neglect of one of the most powerful weapons in the armamentarium of the physician.

I do not claim that it is a cure-all. I do not believe even that every physician is capable of exercising it successfully, but to a large body of the profession it is a wonder-worker in a great many cases. Up to this time, as I have said, it has been used empirically, and mostly by quacks and advertisers; but because a quack uses a thing that is good is no reason that we of the regular profession should ignore it; and if we can show that its effects are at all times the same or nearly the same—that all patients submitted to its action behave the same—I think we are justified in claiming that it has a definite physiological action.

I believe that its action is simply this: Attention is concentrated on or by something to such

a degree that a strain is put on the vasomotor nerves, resulting in a paresis of the whole vasomotor system, with a consequent diminished blood pressure. A patient subjected to hypnotic suggestion invariably (in my experience) starts off with a rapid small pulse; a little later it gets harder, slower and full, and as hypnosis comes on, tension diminishes, and if you put him into deep somnambulism, the pulse is flaccid and slow.

As I said before, blood pressure is diminished; what results? Blood is very easily determined to any portion of the body, because the vessels are wide open, with but one exception. I believe that whereas in physiological sleep the brain is anemic, in hypnotic sleep it is congested, for though the body is asleep the brain is still active and blood is bound to circulate more freely where there is most activity. Now then: I concentrate a patient's attention on a rapidly revolving mirror, and suggest to him sleep. I say, you are bound to sleep if you keep your gaze on it. He concentrates his attention on it: all else is blotted out—his whole attention is on that mirror, and sleep—it dominates him! Blood is pouring into the brain, where activity alone is going on; surroundings get hazy and he does not notice anything but that dominant suggestion: Sleep—and as a result he is soon asleep.

Well, what happens then? We will suppose he is a man who has been troubled with a mild neuritis of the leg and foot. He is sleeping soundly, with a brain turgid with blood. I say to him, "You feel no pain in your leg or foot." His attention is now directed to that foot; there is a rush of blood to the particular brain centre that presides over that limb, the brain cells of that centre are crowded together and massaged against one another by the flowing blood; gradually nutrition there (because of increased metabolism) is increased. The centre that appreciated pain no longer appreciates it—not by any wonderful psychic process, but by a simple reasonable physiological process. But, some one may say, "You have not removed the source of irritation; when the patient wakes, the pain will return; you have no increased metabolism in the limb." I am not too sure of that. True, if there is any material organic change of the tissues that is causing the irritation, it may not be possible to cure it except by a long drawn out treatment, and perhaps not then; but at the time you draw the patient's attention to the painful

area metabolism increases in that part as much so as in the centre presiding over it. Tissue changes take place, the parts are flushed out because of diminished tone of the blood vessels, and the minute vessels are capable of taking up larger extraneous particles than they would at any other time; and they are so taken up and swept out of the tissues and into the general circulation and on out of the system.

To recapitulate, then, my idea is that the phenomena of hypnotism in its action on the human being, is a definite physiological process. It has its psychic side to be sure, but I do not care to discuss its psychic side at this time. I believe that it cures pain and many functional troubles by a process as easily understood as is the physiological action of—say, digitalis, or opium.

I know that some of my deductions are not capable of proof, but how many things in medicine are? I have carried on my studies and experiments during the exigencies of an extensive country practice, and this thesis is far from what I would have desired. But if it will help to stimulate research in this field by some better prepared and more fortunately situated than myself, and if I have succeeded in demonstrating that hypnotism is a therapeutic agent too good to be left to Christian Scientists and other frauds, my labor will not have been in vain.

DISCUSSION.

Dr. Wm. S. Gordon, Richmond, Va., said: I think that Dr. Wallace's paper ought to receive some consideration from this Society simply for the reason that physicians are rather inclined to throw discredit upon that subject. I remember several years ago, while teaching physiology, noticing that one of the highest authorities in the world on that subject (*Landois*) devoted a page of fine printed matter to its discussion. He concluded that there is such a thing, though he did not understand it, and that it could be used to advantage.

The question for us to decide is whether it is science or charlatanry. If it is charlatanry, let us discard it; if it is science, let us use it.

I recall two interesting cases that came under my observation. There were two nurses in the Virginia Hospital; one suffering from alveolar abscess, the other in a high state of hysteria. The head nurse, having used every means in her power to put them to sleep, and failing, sent to me. When I reached the hospital I found the two nurses crying and carrying on at a great

rate. "I am going to put you both to sleep," said I, "and I am not going to use any drug either." I lowered the light and told them to fix their eyes upon it. I stepped over to one of them and said, "You are going to sleep," but before putting her to sleep I said "You will not wake before morning," and soon she was sleeping quietly; and they found her the next morning in the very same position in which I put her to sleep. I then went to the other nurse and said, "You are going to sleep," and she went to sleep. I said to myself, "What have I done?" and I thought I would try to wake them up. The head nurse was looking at me in evident horror. I went to the first and said, "Wake up," but she did not wake, and in spite of everything that I could do she would not wake. Her pulse was normal and respiration good. I said to the head nurse, "I know what is the matter. She has gone to sleep under the suggestion that she will not wake until morning, and it is no use trying to wake her until then." I went over to the other nurse and made a few random passes over her head, and she awoke, saying that she had no pain.

Now, these are absolute facts, for I am the last man in the world to say what was not so in reference to such a matter. I had a nephew over whom I could exercise perfect control. I could make him go asleep across the room, could make him as rigid as a stick, etc.

Hypnotism is a power for good or evil, and it should be used and not abused.

Dr. L. G. Pedigo, Leatherwood, Va., stated that in years past he had taken special interest in this and kindred subjects, but more especially from the scientific point of view as a member of the British-American Society for Psychological Research. He mentioned a number of drawbacks and limitations to the therapeutic uses of hypnotic suggestion—the most important of which is popular prejudice on the subject, backed up unfortunately by the sympathy of a large proportion of the medical profession. He agreed with Dr. Gordon, that the profession should investigate the subject from a scientific standpoint and without prejudice. In the eyes of science, one fact is as potent as another. He recalled his report of a case at the Lynchburg session of this Society some years ago, in which so-called hysterical paraplegia, following typhoid fever, had lasted about three years or more, and which was completely relieved after a seance of about an hour of hypnotic suggestion.

Dr. Charles A. Saunders, Norfolk, Va., said: I am very glad to have heard Dr. Wallace's paper. I consider that it relates to a subject well worth our deepest thought and consideration. I am also glad that Dr. Gordon rose to give his experience with hypnotism, or suggestion, if you choose, as I had intended calling on him to say something—knowing of some of his experiences with it. During the past three years it has been my pleasure and privilege to use hypnotism on three cases, of which I wish now to speak. Two of these were female cigarette fiends, using from 10 to 20 cents' worth of the cigarettes a day for five or six years. One of these cases I hypnotized three times, and the other one twice, with the result that they stopped the use of the cigarettes, and have remained abstainers ever since.

The other, the third case, was that of an hysterical hypochondriac woman, age 32, married for eleven years, no children. This woman had in her early married life had some abdominal trouble, for which an operation was performed in the Johns Hopkins Hospital, which seemed successful, but gave her an imaginary cause to complain. She finally returned to the hospital for relief from her imaginary trouble, and, getting no relief, she put herself under the care of several physicians in Baltimore and in Norfolk, Va., with the same unsatisfactory results. Coming to me in 1900 for indigestion and an imaginary gastritis, I put her under treatment, and after trying a great many appropriate remedies for the condition with no beneficial result, I concluded to stop medicine and try hypnotism. Just before I could try it, however, she met with an accident by having a small piece of board fall on her head, which really did her no harm, but gave her cause for renewed complaint. After trying to relieve her, and finding it impossible, even under care of a trained nurse, I took her to a hospital, and after suggestion given her for two weeks, she rallied and recovered, so that she has not had my own nor any other physician's attention now for more than two years, all of which I attribute to suggestion or hypnotism.

Dr. Wallace, in conclusion: In presenting this question, I know I am running against popular will and public opinion, and leaving the well-trodden path of material therapeutics, and I very seldom speak of it, and yet I believe that much of our results with drugs comes from suggestion. I have never told patients that I was going to use hypnotism, nor said anything to

them about it, for if there is anything positive about hypnotism, it is that you cannot hypnotize a person against his or her own will. There must be a complete relaxation of the nervous system and a surrender of one's self. A great many of our drugs cure by suggestion. I have a case in mind. Some time ago I gave a colored woman some large sugar-coated quinine pills without telling her anything about the effect they would have. The only direction I gave was for her to take one three times a day. In a couple of days her husband came to me and said that "those red pills was powerful," and if I did not give his wife something to check her bowels she would die. She thought the pills were going to act on her bowels, and they did.

ACUTE LOBAR PNEUMONIA.*

By W. B. ST. JOHN, M. D., Bristol, Va.-Tenn.

History.—Pneumonia evidently existed in the most ancient times but was confused with other affections of the thorax. An attempt was made to distinguish between them, but without success, by the use of the terms pleuritis and peri-pneumonia. To Lannec we owe the means of diagnosing pneumonia as we understand it now.

Etiology.—Lobar pneumonia is one of the most widely extended as well as one of the most fatal diseases. It is distributed over the face of the whole globe; there is no climate or race which is free from it.

As to its frequency, it is said to constitute three per cent. of all diseases and six per cent. of all medical diseases, and to account for six per cent. of all deaths in one case and twelve per cent. in the other.

Winter and Spring are the seasons of greatest prevalence. Men are attacked more frequently than women, in the proportion of at least two to one.

No age escapes, but the general impression is no doubt correct that pneumonia is most frequent in early middle life. Yet it is claimed by Loomis that nine-tenths of all deaths after the sixty-fifth year are caused by lobar pneumonia.

Bacteriology.—The two most important and best known microbes of pneumonia are those of Friendlander and Fränkel, called respectively the bacillus and the diplococcus pneumoniae.

The investigations of Wiechselbaum and others showed that though the pneumo-coccus was by far the commonest microbe, yet it was not the only one. Many other organisms can excite an acute inflammatory infection of the lung, which, so far, we have no clinical means of distinguishing from the pneumo-coccus, viz.: streptococci, staphylococci and bacilli tuberculosis.

Perhaps the peculiar course which many cases of pneumonia run may depend upon the nature of the infecting germ or upon some mixed infection.

Under normal conditions the habitat of the diplococcus is in the upper respiratory passages. Netter demonstrated diplococcus pneumoniae in the saliva. Sternberg in 1880 isolated the germ from his own saliva.

Bein considers that the number of people in whose mouths pneumococci are present is thirty per cent. It seems that these germs were only watching for a chance to become pathogenic in the lung, and in all probability the most important factor in furnishing a suitable soil is a rapid change of temperature. It is a fact worth considering that, after a thorough wetting, as is often said, pneumonia not rarely follows. Living in localities exposed to severe winds or to great drafts is not without influence as a cause. Injuries to the chest, psychic conditions of depression, such as anger, grief, sometimes act as a cause.

Sometimes there is a congenital predisposition, as seen by *repeated pneumonia* in children. I myself have witnessed four distinct attacks in the same child in a period of three years. In most cases there is a period of three to five years between the attacks.

Netter holds that the liability goes on increasing, for twenty-six per cent. of those who have had it once have it again; thirty-five per cent. of those who have it twice have it more than twice. Fränkel claims to have seen the twenty-eighth attack in the same person. This being so, the chance of discovering any means of preventing it is small at present. The evidence in favor of direct infection is scanty.

Lobar pneumonia is an inflammation of the lining membrane of the air cells. It consists

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of a fibrinous exudation into the alveoli, which expel the air and completely fills the vesicles so as to convert the parts of the lung affected into a solid airless mass.

It is divided into three stages—viz: 1, Engorgement; 2, stage of red; and 3, that of gray hepatization.

No sharp line can be drawn between these, for they pass gradually one into the other. In the *first stage*, the lung tissues are gorged with blood. In the *second*, the vessels are distended and a copious exudation has taken place from them and filled the vesicles. This exudation is composed of white and red blood cells derived from the blood. The proportion of red to white cells as well as the amount of fibrin differs much in different cases. It was the resemblance in structure to that of a croupous membrane that suggested the name of croupous pneumonia. The *third stage* consists almost entirely of white cells, and it is to the color thus produced, associated with the disappearance of the vascular congestion, that the gray tint is due.

One of the most striking peculiarities of pneumonia is the rapidity with which large portions of the lung become involved, so that in the course of a few hours a complete lobe or the whole of one lung may become consolidated. The right lung is more frequently attacked than the left, and the base is oftener first affected than the apex.

I recently had a *case of typical lobar pneumonia*, and a description of it will serve a good account of the clinical symptoms of this disease.

During the latter part of October, a young fellow aged twenty-three or twenty-four years of age, strong and well developed, went out for an opossum hunt on a cold frosty night, and being tired and hot from walking, laid down on the frozen ground and went to sleep. About daylight he awoke with a severe chill, and some way managed to get home, a distance of a mile or so. His mother put him to bed, and gave him some teas, believing he had a "cold."

I saw him the following day. He was lying on his back with an expression of pain upon his face, breathing rapidly and with evident distress, for the respiration was short and jerky; wings of nose dilated with each inspiration; cheeks red and flushed; tongue coated; skin hot and dry; severe frontal headache; nausea and pain inside; no appetite, bowels constipated, temperature 105° F.; pulse 120 and of in-

creased tension; respiration about 40 and interrupted by cough, which was hacking and without expectoration. Percussion in the lower part of front chest below the nipple was hyperresonant, with marked dullness at base behind, up to angle of scapula; bronchophony and bronchial breathing in the area distinctly audible, over left lung; respiration exaggerated.

Patient was restless and delirious. Next day his condition, if anything, was worse, temperature 105.5° F., cough more painful, expectoration streaked with blood; increased difficulty of breathing; pulse about the same; slept badly. This continued until the sixth day when there was a drop of two degrees in the temperature in the morning with also a drop of 20 in the pulse rate and 18 in the respiration. The general conditions somewhat improved, cough looser. The temperature continued to drop during the day. Late at night it had fallen to 100°, and by morning the temperature was below normal, with a notable drop in pulse and respiration; marked free perspiration. Patch of herpes made its appearance on lower part of chin and also on chest.

Delirium disappeared, night spent in quiet sleep and the patient looked a different being. Flush was gone, the expression of pain and anxiety was replaced by one of quiet weariness; cough continued but was loose, and still rusty. No change could be made out in the physical signs. Temperature rose to 99° for two evenings and then continued normal for a few days; cough ceased by the eleventh day. Rapid improvement took place in the physical signs and by the sixteenth day patient was sitting up, pale but bright, cheerful, and had a good appetite. He made a good recovery.

This instance illustrates the essential features of the disease.

Neimeyer says that there are only two other diseases that are attended with so severe a chill, and they are intermittent fever and pyæmia.

The sudden onset and localizing symptoms while characteristic are not always present. In children the disease is generally ushered in by a convulsion. In old people the chill, cough, and pain may all be absent and yet there be pneumonic consolidation.

Sometimes there is a history of muscular weakness, loss of appetite and disturbance of digestive apparatus, several days before the shivering or chill appear.

Pneumonia is said to commence oftener in

the afternoon or late evening and rarest in the middle of the day.

The temperature remains very much at the same level. It may, however, oscillate a degree. In one of my cases the temperature was remittent, and this by the best authorities is regarded as an unfavorable sign.

Underlich lays great stress on the temperature drop on the fifth day as being characteristic of the temperature. The height of the fever, other things being equal, gives a rough measure of the severity. A temperature of 106° is of itself a grave symptom, especially if occurring late in the disease. The temperature may be quite low, never rising above 100. There are cases reported in which the temperature was never raised at all.

The greatest phenomena of pneumonia is the *crisis*. Hippocrates taught that it occurred on odd days; 52 per cent. terminate on odd days while 48 end on the even, but all statistics show alike the seventh day for preference; after that the 5th, 6th and 3rd.

The average duration of the crisis is 16 hours. All cases in which the temperature reaches the normal in 24 hours are said to end by crisis, while if it be prolonged to 36 or 48 hours it is said to end by lysis.

In bad cases the prostration may be so extreme as to amount to collapse and the patient die, as it were, from the shock of the crisis. In some cases the temperature drops but the pulse and respiration continue at their previous rate. In such cases a fatal result may be anticipated. In fatal cases the crisis may occur either immediately before death or even one or two days before, or the temperature may rise to 107°. More commonly, no crisis occurs, prostration increases and general conditions become worse until asthenia ends in death.

Usually in cases that recover the temperature rises and the general conditions become more alarming just before the crisis. This I have seen several times.

Where the fever is persistent it may be due to a creeping inflammation, which, as it resolves in one part, develops afresh in another. In a case that I recently had, the crisis occurred on the seventh day, the temperature remained normal for two days with every indication of beginning convalescence, when suddenly there occurred very acute pain, great dyspnea, marked hemorrhage—pure bright, red blood in large quantities; notwithstanding these alarming

symptoms, the pulse for the first twelve hours remained uniformly good; but the following day the pulse became weaker and more frequent, breathing more difficult and pain more acute, cough harassing and more blood, with great expectoration.

Patient could speak only in short jerky sentences. He dare not breathe freely; was much distressed by any movement and was not in a condition to bear prolonged examination. These symptoms continued until the third day, when there was a drop in the temperature and a fall in the pulse and respiration with signs of general improvement. There was in the left lung base and apex the characteristic signs of pneumonic consolidation. The temperature drop was by lysis though the afternoon temperature did not become normal for two weeks.

My friend, Dr. Pearson, saw this case with me, and we both were of the opinion that there had been a relapse or a recurring pneumonia as distinct from the former attack. This is quite unusual. The respirations in pneumonia are as a rule shallow and panting. They average about 40 in the adult; a higher rate than 50 is of a bad omen, though in children it may reach 70 or 80 without exciting on that account serious apprehension.

The *dyspnea* is, as a rule, due to the pain, though in some cases there may be marked dyspnea with pain absent; in this case, it is due to some irritation of the central nervous system.

The *ratio of pulse to respiration* in health is 4 or 5 to 1; in pneumonia it may be reduced to 2 to 1. This, of itself, is of diagnostic importance.

Pain is rarely absent. It is like a stitch of pleurisy, to which in most cases it is due. It is usually one of the earliest symptoms, though it may occur late—this when the pneumonia is deep seated. It is often felt over the seat of pneumonia, but in some cases it may be referred to other parts of the body. In children it is often referred to the abdomen, so much so that this disease has been mistaken for appendicitis. Cough is, as a rule, a very early symptom; it is painful and restrained. In the aged or weakly it is generally ineffectual and may be absent. The worst indication given by the cough occurs when, with increasing signs of secretion in the tubes, the cough stops altogether.

The *pathognomonic sputum* is rarely absent; it is viscid and sticks to the side of the ves-

in which it is expectorated, full of air bubbles and of rusty color--this tint due to the presence of red blood cells. It may be purple, when it is known as prune juice.

Bright red blood is rare in pneumonia, but when it does occur, makes one suspicious of tuberculosis. Nothnagle says it occurs only with apex pneumonia.

There may be no sputum. The characteristic rusty sputum generally appears within the first two days and may last even into convalescence. The physical signs may be absent altogether, but as a rule in 24 hours after the sign dullness will be found by percussion. The breathing will be found accelerated and later will show that harsh grating sound peculiar to bronchial breathing in both inspiration and expiration. Crepitation in all of its forms may occur in the course of the attack. The ordinary forms are due to the presence of bubbles in the air tubes.

The respiration in the sound lung is noisy and rough, due to the congestion, which is the result of extra work.

The physical signs while striking are really of less importance in diagnosis than the general clinical signs of the disease.

The pulse gives most important indications in pneumonia and ought in every case to be carefully studied in respect to number of beats, character and tension of vessels.

One of the greatest dangers is the liability to *cardiac failure*, indicated by the usual symptoms. Heart action becomes feeble, the sounds weak, beats frequent and irregular in force. Cardiac failure, of course, is more likely to occur where the heart is already diseased.

Cardiac weakness suggests one or two rules, viz.: Never sit patients up to examine the back, but roll them gently from side to side. Never permit a patient who has had pneumonia to get up too soon.

An intermittent pulse during the attack is a bad sign, but is not of importance after the crisis. In children and the old, it is common after the attack, but quickly passes off with general improvement. In children the pulse is very rapid, 140 to 180, but should occasion no alarm. But a pulse of 130 in adults indicates danger, and the greater danger the more rapid.

Winston Fox says that a rapid pulse is constant in drinkers. The urine is like that met with in other fevers, save the marked absence of the chlorides.

Sleep is always more or less disturbed. Patient dozes or sleeps in short snatches or "cat naps" as the pain or cough permits.

Few cases run their course without some degree of *delirium*. This delirium seems to be twice as frequent in apex as in base pneumonia. It is either due to the fever or some poisonous substance developed by it. In the old and in drinkers it may have a wandering character with hallucinations; again it may be of an active character like that of delirium tremens. I had a case in which the delirium did not appear until after the crisis, evidently due to the debility, as it cleared up in a few days by the use of tonics and stimulants.

Tympanites deserves treatment, for this trouble not infrequently leads to aggravation of the dyspnea and is in itself a serious symptom, difficult to relieve; and where it is of a nervo-muscular origin with great prostration, it is very fatal.

Sweating during the fever is rare and of a bad omen. It is most profuse when the crisis comes on. About 50 per cent. of all cases are attended with herpes, which may appear on any part of the body, though it is usually seen on the lips and chin. Most often it appears on 2d to 5th day. It was regarded by the old writers as a good sign, as it was thought by them never to appear in fatal cases.

Many *complications* are liable to arise in pneumonia, such as pleurisy, bronchitis, endocarditis, peri-carditis, meningitis, abscess and gangrene of the lungs, empyema and cardiac thrombosis. One of my cases developed phlegmasia alba dolens.

There are many *forms of pneumonia*, such as central, bilious, wandering, and ether pneumonia: sthenic and asthenic pneumonia.

Instances of a "one day pneumonia" are reported, but I should think the difficulty of diagnosis great. Cases of long duration are recorded. One author speaks of a case running 38 days. As a general rule, where the case is protracted, there is some complication.

Pneumonia is a treacherous and uncertain disease at any age.

Osler says: "The most widespread and fatal of all acute diseases, pneumonia is now the 'captain of the men of death,' to use the phrase applied by John Bunyan to consumption." In Chicago, during the past ten years, it has gradually replaced consumption as the principal cause of death, which A. R. Reynolds attributes

to the predisposing influence of influenza. Pneumonia may well be called the friend of the aged. Taken off by it in an acute, short, not often painful illness, the old man escapes those "cold gradations of decay" so distressing to himself and to his friends.

The three most important points in the *prognosis* are the age, previous health and habits, and the occurrence of complications. Death happens most frequently between the 4th and the 11th day, usually ushered in by gradual heart failure, cold clammy sweat, and increasing cyanosis. It takes several hours to run its course. Patients die with signs of gradually increasing suffocation.

All risk is not past with *convalescence*. Some die suddenly of pulmonary embolism from the detachment of a clot which has formed during the illness. This is distressing, because it comes as a surprise when all seemed well. Some cases are followed by melancholia or acute mania and others by imbecility.

Treatment.—There is no specific for pneumonia. Every case is a law unto itself. The doctor has to be watchman all the time and therapist only when necessary. There is no disease requiring greater skill and common sense in its management. Many mild cases run their course with little or no medicine.

Attention to the organs of elimination, regulation of the temperature and ventilation of the room, with proper nourishment, at proper intervals, with occasional dose of Dover's powder, may be all that is required.

A capable nurse is all important. There are cases in which undoubtedly blood letting does good, though I, personally, have never bled one. Blisters may be of service during delayed resolution.

The diet should be like the diet for typhoid fever patients. In the outset, a purge of calomel will be of benefit. To relieve the pain a hypodermic of morphia, or at intervals, small doses of Dover's powders or codein.

The Germans regard *quinine* as the nearest approach to a specific especially for the toxæmia; this they give hypodermically in doses of grains 7.5. I have never tried it in this way but believe that its administration in small doses is of benefit as a vascular tonic or its benefit may be due to its retarding influence on the tissue changes. It seems that my cases do better with it than without it. The Germans use iron to control the cerebral anæmia, also use

acetate of lead and opium to control cough and hemorrhage. I have had no experience with this treatment. The all important thing is to sustain the patient, secure perfect rest and sleep if possible, relieve the pain, quiet the cough, control the temperature if excessive; some prefer ice for this purpose; others of equal ability use tepid baths, but this should depend upon the patient and judgment of the physician.

The brunt of the attack is upon the heart, and it should be watched with greatest care and not wait until it has failed before the use of simulants, but at the first sign of cardiac weakness, and as a rule this is early, begin with stimulants, whiskey and strychnine in judicious doses. If collapse threatens there is nothing superior to saline injections or camphor and ether given in olive oil hypodermically. Heat to the chest in some form often affords relief.

In 1883 Petresco treated pneumonia with enormous doses of digitalis. He administered as much as two drams of the powdered leaves in 24 hours and reported marked success. Later in St. Luke's Hospital they tried the normal liquid digitalis, commencing with three minims every 3 hours and increasing to 10 minims every 3 hours and continued until convalescing was fairly established. In some cases the benefit manifested itself in the sustained strength of the heart and the unfaltering vigor of the circulation. I have had no experience with this treatment and would be afraid to trust it.

The thing that kills in pneumonia is the toxæmia and this is what we have to fight. Many experiments have been made along this line in the hope to find something that would neutralize this poison or limit its manufacture and aid in its elimination. For this purpose *anti-pneumococcus serum* has been employed, but so far the weight of evidence is against it, for as a remedy it is not superior to other methods of treatment in common use.

The Massachusetts General Hospital, the Harvard and Johns Hopkins have been doing some original work along this line and the men in charge of these departments report as follows:

Dr. Satterthwaite, Professor of Clinical Medicine, New York Post-Graduate, says: "I have never used anti-pneumococcus serum for pneumonia."

Dr. Richard C. Cabot, Professor of Clinical Medicine Massachusetts General Hospital, and author of the best, and only, English work on

the blood and clinical diagnosis, says: "I have no faith in anti-pneumococcus serum, and I think the great majority of those who have tried it are with me in this skepticism."

Dr. McCollom, Resident Physician of the Massachusetts General Hospital, says: "I have used anti-pneumococcus serum in a small number of cases and I have found it worthless." There is nothing in the literature of the subject to prove that it ever has been of advantage. Its use is based on false reasoning.

Dr. Alfred Stengal, Professor of Clinical Medicine in University of Pennsylvania, says: "I have used it myself and have seen it in use, and have not been impressed with any evidence of specific properties. I have seen the temperature fall soon after the injection only to rise again a little later. None of the cases of genuine and well developed pneumonia that I have seen treated with this serum has run a course different in the slightest from that I should have expected had no such remedy been administered. Reasoning from purely scientific data referring to the life history and action of the pneumococcus, I should not have expected the anti-serum to be of much value, and the practical result justifies this conclusion."

Dr. Thomas McCrae, Resident Physician of Johns Hopkins Hospital, says: "We have not used the anti-pneumococcus serum here for some time. After trying it in a certain number of cases, we came to the conclusion that it was more likely to do the patient harm than good. In several of our cases there was quite marked collapse, with weakness of pulse, etc., after the injections."

TREATMENT OF PNEUMONIA.*

By T. JEFFERSON HUGHES, M. D., Saltville, Va.

I do not presume to present a line of treatment new and superior, but to ask for a discussion of the treatment of pneumonia from which we may expect valuable suggestions in the treatment of this terrible malady.

The physician of to-day, with the kernels gathered from the experience of our forefathers, coupled with the modern advances of the profession, is encouraged to battle with most any disease, with a record showing a greatly de-

creased mortality, save that of pneumonia, the mortality of which is steadily increasing—a sad commentary upon the advance of hygiene and therapeutics. Too often does the harrowing call come to us at midnight, often necessitating the braving of winter's icy blasts or of the deluging torrents of blinding, wind-lashed rain, bringing us to the bedside of a victim of pneumonia.

Internal treatment.—To enumerate the drugs advocated by the numerous authors in the treatment of pneumonia would not only make this article too long and uninteresting, but would be a repetition of matters thoroughly familiar to all.

Recognizing, therefore, the limitation of this article, and realizing the impossibility of mapping out a line of treatment applicable to all cases of pneumonia, we shall consider some of the cardinal principles, and give a line of treatment which has proven most satisfactory in the majority of cases under our care and observation.

In the treatment of this, as in many other diseases, each case must be studied and indications met. No two cases can be treated just alike.

The basis of treatment which I have adopted of all cases of pneumonia may be stated to be the use of *alkalies* and *strychnia*. After having examined the patient carefully and diagnosed, or even suspect pneumonia, I prescribe a cathartic consisting principally of calomel, followed, if necessary, with a saline laxative to flush out and clean the alimentary canal. This is, I think, one of the cardinal principles in the treatment of disease.

Pneumonia patients suffer from an excess of uric acid in the system; and upon this basis I resort to alkaline treatment. I give the salicylate of sodium, or, more often, a combination of sodium salicylate and citrate of potash—5 grains of the former to 10 grains of the latter—every two or three hours.

As a stimulant I use strychnine. I prefer it to all stimulants, as it better prepares the respiratory organs and muscular system for the work they have before them. Give it for effect, varying the dose accordingly. Avoid the use of medicinal antipyretics as far as possible, as they all have a tendency, if continued, to depress the heart's action. If, however, these seem indicated, good results usually follow small doses of aconite or veratrum viride combined with spirits of nitrous ether.

* Read before the Southwest Virginia Medical Society during its session at Wytheville, January 12-13, 1904.

The condition of the bowels should be carefully noted throughout an attack of pneumonia. If tympanites appears prescribe some intestinal antiseptic. I prefer the sulphocarbolates—giving from five to ten grains of the sulphocarbolate of zinc every two to four hours as the case may require. Keep down tympanites and thus lessen toxic absorption from the intestines, as the latter is in direct proportion to the former. It is rarely necessary to use an opiate. If, however, local applications fail to relieve the pain and quiet the patient, give Dover's powder, or, if necessary, a hypodermic of morphia. Should diarrhea be present—a condition rarely met—minute doses of calomel together with the sulphocarbolates are usually all that is needed to control it.

If there is marked tendency toward heart-failure, add to the strychnine one-one hundred and fiftieth grain of nitroglycerine every two or three hours. This latter drug is claimed to be of value in lessening the peripheral resistance to the laboring heart in its effort to force the blood through the consolidated lung by producing dilatation of the capillaries.

Unquestionably one of the most serious elements to contend with in most cases of pneumonia is toxemia. Hence the plea for using intestinal antiseptics, and the maintenance of the aseptic condition of the intestinal canal, as far as possible. Creasote has recently been highly recommended—many claiming to mitigate the attack, while some claim to abort pneumonia by pushing this remedy to tolerance. I have used it with apparent good effect in some cases.

I have used the anti-pneumococcic serum with seemingly varying results. It does seem, in some cases, to lessen the pneumococcic septicemia. This serum is, however, still in the experimental stage, but I believe the day is not far distant when it will be to the pneumonia patient what anti-diphtheritic serum is to the victim of diphtheria.

I feed very little during the first 24 hours of the disease. After this time I give light nourishing and easily digestible food. Pneumonia patients should occupy a well ventilated room at an even temperature of about 70° F.

Local Treatment.—Local applications in the treatment of pneumonia are by no means of minor importance. The mustard plaster and fly-blister are time honored remedies, as are also turpentine stupes, coal oil, camphor, hot

water bottles, etc. Their familiarity to both the laity and the profession renders further comment unnecessary.

As there is some difference of opinion as to efficiency of, and in what stage of the disease, the blister should be employed, a brief discussion of its use may not be out of place here.

I do not use the blister in every case of pneumonia. In some cases, however, it is serviceable in two stages of the disease. The first indication for its use is in the first step in what I believe to be the ideal local treatment of, not only pneumonia, but of other inflammatory conditions of the air passages. If the numerous local applications usually employed before the physician reaches the scene have not produced a hyperæmic condition of the skin, apply a fly blister over the affected lung and let it remain just long enough to produce this condition. I then apply a poultice of antiphlogistine fully an eighth of an inch thick as hot as can be borne over the front, side and back of the affected lung, and cover with cloth or cotton.

The counter-irritation produced by the cantharides plaster greatly facilitates the action of the poultice in stimulating the cutaneous reflexes by causing a contraction of the deep vessels and coincidentally a dilatation of the superficial ones, which, aided by its hygroscopic action, greatly relieves the overworked heart.

The second class of cases in which I use the blister, is during the third stage, when resolution is delayed.

There are doubtless physicians present who were taught to and who in the beginning of their professional career did practice blood-letting in almost every case of pneumonia. Time has done honor to the bold efforts of pioneers in this heroic treatment of some cases of this, as in other diseases; but it has laid the hand of oblivion on the ghastly failures of the many early and injudicious followers of this practice in every case of pneumonia.

I have rarely seen cases where I thought venesection would be beneficial, except in the so-called sthenic type of pneumonia in the young, robust adult with a full tense pulse, with cyanosis and embarrassed respiration. The indication for bleeding is usually in the early stage of the disease, though it may be of service in an advanced stage where there is engorgement of the right heart, which is unable to relieve itself of its burden—owing to the lung being already engorged with blood which it cannot

get rid of. As a last resort, for this condition I believe I have seen lives saved by bleeding followed by an intravenous injection of normal salt solution.

DISCUSSION ON ACUTE PNEUMONIA.

Dr. E. T. Brady, Abingdon, Va.: Considering the unusually prolonged cold of this season, interspersed as it has been with frequent but short warm days, there have naturally been an undue proportion of pneumonia cases in our section, and this makes the valuable and interesting papers just read peculiarly opportune.

It is almost disheartening to face as we must the fact, that, although the former dreaded scourges of diphtheria, small-pox, and even the former despot tuberculosis, have been gradually but effectually shorn of their terrors by the progressive results of scientific endeavor, the old enemy pneumonia still persistently and relentlessly retains its unenviable notoriety and leads in the death roll of the world. No age, no clime escapes. We cannot too thoroughly investigate pneumonias, and it is to be hoped that every one will express himself upon the subject, as with so much to be gained every ray of light thrown upon it will add that much toward the illumination of the field which now seems so dark.

The pathological knowledge of the subject seems complete, and though there is disputed ground as to its direct causation, there is no dispute as to the actual conditions present, once the disease has appeared.

It is useless to re-cover the ground so ably presented in the papers. They both reflect my views, and save to emphasize what they portray—the dangers of heart-exhaustion and toxæmia—I have little to add.

I do think, however, that the use of expectorants is more general than either paper indicates, and it is to get out the ideas of those present on this line that I speak at all. The use of expectorants in a judicious manner seems to me both proper and necessary. I believe that they lessen the density of the solidified area, and hasten the excretion and expulsion of accumulated detritus. Without enumerating the hasten the excretion and expulsion of accumulated detritus. Without enumerating the eliminated by the lungs, such as the ethers and ammonia salts, and alcohols. These all are likewise stimulating, and I believe desirable accompaniments to any treatment. The carbo-

nate of ammonia I believe the best of its class, and the compound spirits of ether, or Hoffman's anodyne is also most efficient, especially in those cases where pain or nervous phenomena are prominent.

I am glad to see the stress laid upon the proper cleaning out of the intestinal tract, as if at all clogged it certainly adds to the toxæmic danger and should be guarded against.

Dr. Green, Wytheville, Va.: I want to first congratulate *Dr. Hughes* upon his remarkable results. His death rate has certainly been phenomenally low, and I hope may so continue. Certainly such results would please us all. Pneumonia in the old is to me a nightmare. Although the laity raise more hue and cry over smallpox, diphtheria and other more sensational ills, no physician approaches either with the dread he has of pneumonia. For every one death from these diseases, pneumonia has registered hundreds.

The stimulation of the heart has been very properly dwelt upon in both papers, and has my hearty endorsement. I believe that this is the most important feature in treatment. Expectorants and eliminants also have prominent place. I have been using the carbonate of creasote with satisfaction. Counter-irritation has its place, as have the cotton-jacket and silk or other protections. Even poultices if properly applied—that is, if they can be properly applied—have their uses, but I want to register my emphatic protest against the use of “antiphlogistine” or any other “anti” if it be a proprietary or patent pocket emptier. Why one should use western blue mud and glycerine is to me a puzzle. The effect I do not criticize, the article I do. Should I desire to use it, I would much prefer mixing my clay and glycerine at ten dollars per acre for the former, and reasonable rates for the latter, than paying one dollar a pound for the proprietary labelled article. The old Dover's powder has proven efficacious in my hands both for controlling pain and loosening expectoration, and by promoting sweating it has some control over the temperature and elimination of noxious derivatives. Ice applied locally seems in some cases to lessen congestion. Liquid diet is, I think, a factor in lessening intestinal torpor and preventing toxæmia from that source.

Dr. M. M. Pearson, Bristol, Va.: The admirable papers bring out clearly and with proper emphasis the most interesting features of this

dread disease. The proven mortality and the fact that there has been no diminution in that death rate in all the years is mortifying. It is, however, a spur to greater endeavor.

There seems to be practical agreement as to the causes of danger in pneumonia—toxæmia and heart exhaustion. If we consider the pathological conditions present, it is not surprising that these are the danger points. Picture to yourselves the immense pulmonary area in which the circulatory channels are encroached upon at every point by exudate and conglutinate, the air spaces similarly lessened, and you can readily see that as the oxygenating power is lessened, by just so much is the toxæmic danger increased, and, in like proportion, does the burden upon the heart increase with every encroachment upon the blood channels. The prompt, free, and persistent use of heart stimulants, especially strychnia, cannot be too forcibly commended. As Dr. St. John has said, the German writers formerly used digitalis freely as an adjuvant. While I do not employ it as freely as they, I do use it, and believe it is a valuable aid to strychnia. The toxæmia I combat with whiskey and careful control of intestinal elimination. The latter is important, and where tympany or constipation are present, irrigation and mild purgation are demanded.

Dr. Hutton: I have little to add to either the papers or discussion, both of which I have enjoyed. I have, however, heard no mention of oxygen, which my own experience has proven a powerful help in time of need. I had a little patient in extremis, and after futile efforts to obtain oxygen ready prepared, succeeded after hard struggles in making it from potassium chlorate in the usual manner, and gathering it in crudely extemporized gas bags, we administered 5 or 6 gallons at a time by inhalations. Keeping this up at regular intervals, we had the pleasure of giving not only relief and comfort, but returned the progress of the case to a crisis, with recovery; a result which I am sure would have been impossible without the oxygen. Effort should be made to have local druggists supply any demands which emergency may bring. The oil silk jacket has been a stand-by with me. I heartily endorse what has been said on the subject, and hope free discussion will continue.

Dr. R. W. Sanders: I am usually content to remain in the background as an "old fogey," but break my rule to say that while I, in keeping with the "advances," have adopted the prevailing

methods as indicated in this discussion, still I can frankly say that my observation is that the death rate of pneumonia is to-day as high as it was in my early professional days, when we used the lancet freely—I might almost say invariably—in cases of pneumonia.

Dr. E. T. Brady: I am glad to hail our "nestor" on the floor. Were he as free with his words of wisdom during the sessions as he always is during the intermissions, he would double the debt of gratitude we already owe him for his counsel, his example, and his unwavering loyalty to, sympathy for, and attendance at our regular professional gatherings. Would that more of those who have for years garnered in our chosen field would spread before us the fruits of their experience. It is to Dr. Sanders and his like that we look for inspiration, and I hope that now that he has made the start, he will "let the good work go on."

I have at times bled in early stages, and I am sure with benefit. I am not convinced but that early bleeding during the congestive stage may abort, and usually lessens in severity most attacks. Certainly many of our best authorities give it at least the sanction of half-hearted approval, or rather do not emphatically disapprove. I have never ventured to bleed in the other stages, though strongly tempted to do so, as it has seemed to me that moderate bleeding would lessen toxæmia and remove a portion of the burden on the overtaxed heart. I would like to ask Dr. Sanders if it was the custom in lancet days to bleed regardless of the stage of the disease, and the comparative effects in the different stages.

Dr. Sanders: While we usually saw our cases early, we sometimes rode long distances, and sometimes only saw them in the second stage. I believe we usually bled regardless of stage, the only contra-indication being extreme anæmia or great heart irregularity, or organic disease of heart. I cannot say that I ever noted bad effects from any bleeding in the disease. I have noticed very great benefit, both upon temperature and delirium.

Dr. Pearson: I cannot agree with Dr. Brady as to bleeding ever being advisable. I believe it is the worst thing one could do at any stage. Originating, as it does, by an infection, loss of blood would lessen the vitality, and therefore the defensive powers. Nor do I think the withdrawal of blood would lessen the poison; it would rather concentrate it. I believe the in-

fusion of salt solution would by diluting the blood benefit the toxæmic condition. I do not approve of blood letting.

Dr. Brady: My idea as to the blood letting was, as I said, untried by me, yet it does seem to be logical that to remove blood and with the noxious material contained in the portion so withdrawn, would certainly lessen for the time being the amount of toxins in the system, and therefore lessen the danger from that source. Temporary though it would be, it would give time to combat the formation of more toxins. If it doesn't lessen that condition in these cases, why does it in eclampsia or uræmia? The other danger—overburdened heart—would also, it seems to me, be arrested. Having a failing horse, we can apply the whip or lessen the load. Now, it seems logical that to relieve the dilated auricle and tired muscle of a part of the tension would be quite an aid while we are applying the therapeutic whip of strychnia or digitalis.

Dr. Ribble: Does Dr. Brady believe in bleeding for eclampsia, and is it the generally accepted teaching?

Dr. Brady: Yes; so far as approving is concerned, and I believe the preponderance of authorities so incline. While up again, I would like to ask Dr. Hughes if a number of his cases were not of the class styled irritative pneumonia, induced by the extremely irritant gases, chloride and ammonia, at the alkali works?

Dr. Hughes: A number of my cases seemed to originate as Dr. Brady indicates. Certainly we saw many cases immediately follow exposure to those fumes.

Dr. Pearson: I hardly recognize such a type of cases, and, at any rate, they would hardly have place in a discussion of lobar pneumonia. Being due to infection, it could hardly originate in that way. Even if we do have a frequently mixed infection, the pneumococcus is generally recognized as the source of the disease, and I fail to see any connection with chemical irritants and pneumonia.

Dr. Brady: Irritants causing pneumonia are to me a fact, and not a theory. During a term of service in the anthracite regions of Pennsylvania I not infrequently had cases, sometimes dozens at one time, originating from the inhalation of sulphurous fumes while fighting fire in the mines. I have seen it follow the inhalation of flame, in burning cases, and have heard of it frequently in chemical manufacture. I

would frankly say here that I am not yet a convert to the pneumococcus theory; indeed, I am skeptical. Certainly the anti-pneumococcic serum has been relegated to oblivion and quackery by our most learned and germ supporting authorities. But even should one believe in the germ causation, would not the raw, congested surface offer a perfect indus for their development? I must say, however, that flame and chloride gas would, theoretically, be at least uncomfortable for the germs, and ideally aseptic in theory.

Dr. Green: It seems to me that the surface presented by an imitated surface, whether chemical or what not, would make a focus for development of germs, and at any rate I believe irritants can and do cause pneumonias, which are typical and of the lobar type.

Discussion closed by some one saying: "I haven't heard a word of our old friend turpentine."

TYPICAL CASE OF EXOPHTHALMIC GOITRE.*

By WILLIAM M. LYNE, M. D., Richmond, Va.,
Instructor in Therapeutics, Medical College of Virginia.

Exophthalmic goitre, known also as Graves' disease and von Basedow's disease, is characterized by tachycardia, protrusion of eyeballs, and enlargement of the thyroid glands associated with many nervous, vasomotor, secretory and metabolic disorders.

It may appear suddenly in a few hours or days, though as a rule it is of insidious development. The *real exciting cause* is not known, but age, sex, neurotic temperament, infectious diseases, heredity, emotions, gastro-intestinal disorders, injuries and pregnancy are recorded as etiologic factors. It is not confined to man, there being several well authenticated typical cases found in the horse, cow and dog.

Many investigators consider it a neurosis either of sympathetic or bulbar origin, while many clinicians lean to the belief that it is a toxemia resultant from an abnormal quantitative or qualitative secretion of the thyroid gland.

The theories of its origin through the sympha-

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thetic nervous system are untenable from both an anatomic and physiologic scrutiny, and are fast being abandoned.

The adherents to the bulbar origin, point to the presence of cardiac, respiratory, vasomotor, secretory, thermic, diabetic, spasmodic and ocular disturbances, and at times bulbar hemorrhage or even an association of tabes. Experimental lesions on the medulla in certain localities have produced in animals exophthalmos, tachycardia, enlargement of the thyroid gland and tremor. Dana states primarily it is a disease of nerve centers. Analogous symptoms common to hysteria and neurasthenia furnish still further presumptive evidence of the nervous origin of exophthalmic goitre. Necropsic findings also show pathologic changes in the medulla, but these are not always constant.

As evidence to the perversion of the thyroid gland and its secretion is found—

- (1.) That the thyroid body is enlarged.
- (2.) That thyroid extract administered in large dosage produces many of the very identical symptoms of exophthalmic goitre.
- (3.) That Tyson mentions a case reported by Bacleres where an overdose of the gland actually caused the disease itself.
- (4.) That extirpation of a portion of the gland frequently cures.
- (5.) That microscopic examination reveals true hypertrophy and increased vascularity of the gland associated with colloid degeneration.
- (6.) That there is a striking antithesis between myxœdema and exophthalmic goitre; a deficiency of thyroid secretion, atrophy or absence of the gland on the one hand, and hypersecretion and hypertrophy of the gland on the other.

This contrast is so marked as to deserve elaboration in parallel.

MYXŒDEMA.

Eyes—Retracted.
Lids—Heavy, sleepy, palpebral fissure lessened.
Pulse—Slow and small.
Skin—Dry and thickened.
Temperature—Subnormal.
Nervous condition—Depressed, apathetic, dull.
Physical condition—Obese, more or less heavy.

EXOPTHALMIC GOITRE.

Eyes—Bulging.
Lids—Retracted, staring, fissure increased.
Pulse—Rapid and large.
Skin—Moist and thin.
Temperature—Elevated.

Nervous condition—Erethic, excitable, active.
Physical condition—Thin or emaciated.

It is interesting to note, however, that eleven cases are recorded where both myxœdema and exophthalmic goitre were present in the same patient, coexistent—viz., 4 in which the exophthalmic goitrous symptoms were only episodes in the course of myxœdema; 2 the very converse; 2 appeared and persisted simultaneously, and 3 others in which some symptoms appeared.

Starr explains this coexistence as resultant from a destruction of the gland by some cystic growth producing myxœdematous symptoms associated with cystic goitre. It is in this class of cases where thyroid extract has been of some service.

Sajous goes a step further in declaring that over-production of thyroid secretion means hyperoxidation—i. e., the symptom complex we recognize as exophthalmic goitre. In view of this he quotes Robt. Hutchinson that “the effect of the administration of thyroid extract is to increase oxidation in the body; it makes the tissues, as it were, more inflammable so that they burn away more rapidly.” Its effect in the treatment of obesity is well known.

The *prognosis* is unfavorable as to a cure; the duration is chronic; as a rule the symptoms remaining stationary often for years. A few cases have spontaneously recovered, others have died after a few days or weeks from exhaustion.

The *complications* of exophthalmic goitre are many. Dana writes: “Mental derangement occasionally occurs in the latter stages; hysterical crises, epileptic attacks, choreic movements, paralysis of ocular muscles, muscular atrophy, paralysis agitans, Addison’s disease, diabetes, locomotor ataxia and local œdema have been observed. Excepting hysterical attacks, these complications are rare.” Maude states that a mild grade of multiple neuritis is an almost constant accompaniment, and to it are due many of its symptoms.

The *treatment* has been varied. Drugs, electricity, surgery and serum have all been used, along with rest. Drugs which had for their object a lessening of secretion, as belladonna; absorbents and alteratives internally, externally and parenchymatously, as iodine, carbolic acid, alcohol; vasomotor and general tonics, etc., have all been used. Electricity has many enthusiasts. Nothnagel advocates the galvanic, Bartholow the galvano-faradic currents. Surgery offers

different fields in ligation of several thyroid arteries, partial thyroidectomy, and division of, or removal of, the cervical sympathetic ganglia in part or whole.

Case.—History.—Patient, white female, 32 years old, stenographer and teacher, single, American.

Family History.—Maternal grandfather dead, age 76 years, cause of death, cancer of face; maternal grandmother dead, age 88, cause of death, senility. Paternal grandfather dead, age 83 years, cause of death, senility with hypertrophied prostate and cystitis. Paternal grandmother dead, age about 67 years, cause of death, congestive chill. Father dead, age 63 years; cause of death, cancer of pancreas. Mother living, age 52 years, well and hearty. Brothers, three, all living, one stammers slightly, another has choreic tic of eyelids. Sisters, three, living, all healthy; an adult sister died of pneumonia.

Ancestors have no venereal history whatever; no addiction to alcohol, but have rather neurotic temperaments, and several cases of cancer, never any history of goitre in family.

Personal History.—The patient is the issue of consanguineous marriages for several generations on both sides of the family.

Previous Diseases.—Pertussis in early life, hepatic torpor now and then; also malaria. She suffered with dysmenorrhœa and amenorrhœa during the establishment of the menstrual function, none since, however. The patient considered herself remarkably healthy up to 6 or 8 years ago, when she was threatened with nervous prostration, so-called, at which time she had to have glasses adjusted, the defect being due, as the oculist informed her, to a small goitre which disappeared on the treatment of iodine counter-irritation with exposure to the sun's rays. She informed me that a previous physician told her that she had normally a fast pulse. To quote her own words, "I believe that I have a fever all the time even when I am well, for I feel so hot; steam flushes come over me, and I perspire excessively, even in the coldest weather; besides, I suffer with palpitation of the heart at times and shortness of breath."

History of present disease.—April 18th I first saw the patient professionally. She at that time had a typical attack of measles, which ran the usual course, with gastro-intestinal and respiratory symptoms rather well defined, there being marked nausea and vomiting, diarrhœa

and bronchitis. The bronchitis was easily controlled and her temperature fell to 99.5° F., pulse 96. Not so, however, as to the nausea and vomiting, which I then thought was due to a mild catarrhal condition—a sequel of measles. Nausea continued for 6 or 8 weeks, vomiting but rarely; neither increased by any kind of diet. Exhaustion was extreme and loss of flesh very rapid.

I will now detail the symptoms, signs and the result of the microscope, under the subcaptions of systems rather than the order of their appearance.

Goitrous Symptoms.—The entire gland is hypertrophied, but more prominently on the right. The goitre measures 3 and 2 inches respectively, upper and lower boundaries, by 1½ inches. The circumference of neck at the upper border of goitre is 13 inches, the lower 14½; no thrill.

Ocular Symptoms.—Quite marked bulging of both eyes, though the sclera is not seen above the iris.—Myopia. Von Graefe's sign, inability of upper lid closing on a downward motion of the eyes, not present; Stellwag's sign, increase in width of palpebral fissure, not marked. Defective convergence present. Choreic movements of lids and at times they are œdamatous. Pupillary reflexes normal.

Circulatory System.—Heart normal. Beats increased in force and frequency—120 to 140. Marked palpitation at times. Pronounced epigastric and abdominal aortic pulsations.

Blood examination, June 22, 1903:

White blood cells. 6100

Red blood cells. 4510000

Hemoglobin 100 per cent.

This is at once seen to be a normal blood count, and is remarkable in view of the fact that the patient had been ill for two months and had wasted away from 120 pounds to 75 pounds approximately. Many authorities consider anæmia a predisposing cause.

Respiratory System.—Occasional epistaxis. Lungs normal. Respiration varies from 24 to 36. Dyspnœa at times. Chest expansion 3 inches.

Vocal Symptoms.—Voice hurried, stridulous, high pitched, nasal, and at times weak. Good deal of thin clear laryngeal mucus during time when patient was nauseated, which has disappeared since. No laryngoscopic examination.

Gastro-intestinal System.—Nausea pro-

nounced in the beginning, associated with occasional vomiting. This lasted for quite a month. Cyclic diarrhœas irrespective of the nature of the diet. Marked boulimia and thirst.

Urinary System.—Oliguria was present as a rule, thus differing from the usual polyuria. Patient micturated frequently but in small quantities. Amounts varied from 6 to 25 ounces in 24 hours; but after special treatment since July 21st, the quantity noticeably increased, reaching as much as 79 ounces. Chemical examination revealed a trace of albumen only once, no sugar at any time, but a heavy sediment. Appended are complete—

Urinalyses.—June 18, 1903.—Daily quantity, 16 ounces, 6 drachms. Sp. gr., 1023. Total solids, 410 grains. Reaction alkaline. Color, medium amber. Transparency, cloudy. Smell, normal.

Chemical Examination.—Urea, 2.4 per cent. Bile, none. Glucose, none. Albumen, none. Blood, none.

Microscopical Examination.—Sediment, profuse. Epithelium, a few granular. Pus, none. Uric acid, a few crystals. Calcium oxalate, none. Casts, none. Urates, none. Phosphates, many triple phosphates.

Physical Examination.—June 24, 1903.—Daily quantity, 10 ounces. Specific gravity, 1024. Reaction, acid. Color, dark amber. Transparency perfect. Smell, strong.

Chemical Examination.—Urea, 2.1 per cent. Albumen, trace. Glucose, none.

Microscopic Examination.—Sediment, not much. Pus, none. Uric acid, none. Epithelium, many squamous. Calcium oxalate, none. Casts, several mucoids. Urates, none. Phosphates, none. Other products, none.

Physical Examination.—September 1, 1903.—Daily amount, 66 ounces, 1 drachm. Specific gravity, 1018. Reaction, acid. Color, medium amber. Transparency, perfect. Smell, none.

Chemical Examination.—Urea, 1.5 per cent. Albumen, none. Sugar, none.

Microscopic Examination.—Sediment, none. Epithelium, few squamous. Pus, none. Uric acid, none. Urates, few amorphous. Calcium oxalate, several crystals. Casts, none. Phosphates, none. Other products, none.

Reproductive System.—Patient menstrated during defervescence of measles but not since. Mammary glands atrophied; no manual examination of generative organs.

Cutaneous System.—Perspiration excessive, amounting to sweat. Papular eruption seen on face. Skin muddy like malaria cachexia. Pigmentary deposits. Prior to 6 years ago the patient had a beautiful shell tinted complexion. Loss of hair in quantity. Edema of ankles, feet and hands. This œdema pits, however. Marked trophic disturbances of finger nails; every one has deep depression and constriction running transversely across.

Nervous System.—Nervousness pronounced, very restless, keeping the hands constantly in motion; complains of feeling hot at all times; flushes. Temperature runs from 99 to 100½° F. Insomnia marked. Tremor of hands. Progressive muscular atrophy, especially the interossei muscles. Fibrillary muscular trembling. Thenar eminences atrophied. Muscular spasms especially at night in feet and legs. Talipes-equino-varus in both feet, more pronounced in right. Tactile sensibility well preserved everywhere; discriminates well between heat and cold. Sensitive to pain. Reflexes absent in ankles, knee and elbow. Tongue slightly deviated to left on protrusion, though she can move it easily in all directions. Astasia-abasia, or inability to stand and walk alone, present. Memory impaired. Very voluble; at times despondent, but usually there is present mental erethism. Irritable and hard to please; general muscular weakness; hands so tremulous as to drink with difficulty unassisted. Hand grasp very feeble; can't grasp a pencil. Complaints of numbness in legs, feet and back. Functional paraplegia.

It will readily be seen from a resume of the extensive symptomatology of the disease, excluding complications, that we have a most typical case of exophthalmic goitre.

MAJOR SYMPTOMS.

Exophthalmos, double,
Hypertrophied thyroid gland,
Tachycardia and palpitation,
General nervousness,
Hand tremor.

MINOR SYMPTOMS.

Nausea,
Vomiting,
Cyclic diarrhœa,
Boulimia and polydipsia,
Oliguria,
Alterations in voice,
Dyspnœa,

Increased respiration,
 Pigmentary deposits,
 General trophic disturbances,
 Local œdema,
 Flushes and sweating,
 Elevation of temperature,
 Menstrual disturbances.

Complications.—Paralysis, progressive muscular atrophy, slight chorea.

Treatment.—Supportive and symptomatic treatment. Counter-irritation over the goitre with ung. hydrarg iodid rubr. Bromides controlled nausea and vomiting. Belladonna pushed to physiological action controlled sweating. Massage, hydrotherapy and the glycerophosphate of soda (Schering) were resorted to for nervous symptoms. Protan acted most favorably on diarrhoea. And now for the remedy which theoretically is as rational as the administration of thyroid extract in myxœdema, but which is the very converse. In the former we endeavor to add to or increase a deficiency, in the latter we neutralize or deduct from an excess. The remedy referred to is known commercially as Rodagen, a desiccated milk from dethyroided goats; it is a white powder rather palatably combined with milk sugar, and is marketed by Victor Koechl & Co., New York. I administered 15 grains four or five times daily, at the rate of one ounce a week. It can be increased to two ounces per week. Combined with the glycerophosphate of soda, it exerts the best influence over temperature, emaciation, respiration, pulse and urinary secretion. There were no bad results. These drugs were commenced on July 21st. The beneficial effect was not immediate, taking quite a week or ten days to note any result. The temperature then fell to normal; respiration 20-24; pulse 92-96; urine actually increased to 79 ounces; sweating largely controlled, muscular tone fast improving, nervousness diminishing, brighter mentally, rapidly regaining flesh; paralysis altogether disappeared in feet, able to walk alone to some degree, but in a shambling, tottering gait, the knees collapsing and the patient falling. Insomnia is much improved. Withal the patient is progressing nicely, has regained nearly her normal weight, sings, performs on the piano and is practising shorthand. The patient is not cured, but the gravity has greatly ameliorated.

It will be noted from the line of treatment

that I adhered to both the nervous and hypersecretion theories.

I desire to acknowledge able assistance in consultation from Doctors Ramon D. Garcin and Greer Baughman, both of this city; to the latter is due all of the microscopic work.

The following authorities have been frequently consulted: *Twentieth Century Practice*, Vol. 4; Sajous' *Analytical Cyclopedia of Practical Medicine*, Vol. 3; Dana's *Nervous Diseases*; Flint, Osler, Tyson, Stephens, Hughes, on *Practice*; Church-Peterson's *Nervous and Mental Diseases*, *Medical News*, Vol. 40-74.

ANEURISM OF EXTERNAL ILIAC—SPONTANEOUS CURE BY SLOUGHING.*

By SOUTHGATE LEIGH, M. D., Norfolk, Va.,
 Surgeon in Charge the Sarah Leigh Hospital.

In looking over all available medical literature on the subject of aneurism in this region about the external iliac artery, I find only the merest reference to the possibility of spontaneous cure of this most painful and dangerous condition.

During the past twelve months there has fallen into my hands a case so interesting in its course and result, and so instructive in a line which the modern surgeon is paying too little attention to, that I thought it would be worth while to bring it to the attention of the Society.

The patient, a colored man, age 54, came to me one year ago with the history of having had a lump in his left groin for about four years. He had worked a great deal with the scythe, and attributed the swelling to the straining produced by his occupation. His family and previous history was good—no history or sign of syphilis. He stated that the swelling was at first small, and gave but little trouble. It gradually grew in size and caused pain and œdema of the whole limb. His physician stated to me that the venous circulation was greatly retarded.

He entered my service at the Protestant Hospital in Norfolk, October, 1902. At this time his general condition was so bad that operation was not to be considered; blood was still pass-

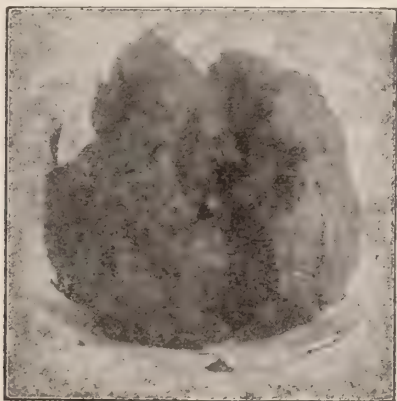
*Read before the Medical Society of Virginia during its thirty-fourth annual session, at Roanoke, Va., September 15-17, 1903.

ing through the femoral. The limb was somewhat swollen. The mass was then about four inches in diameter and oblong in shape. It seemed to spring from the vessel just above Poupart's ligament, and to bulge out in the groin like a mass of suppurating inguinal glands. Patient suffered at times intense pain. On standing he had to bend the body forward and turn the thigh inward. He was put on strict rest treatment, with bandage pressure to the mass and potassium iodide internally. It required the use of considerable amount of anodynes to quiet the pain.

The mass gradually increased in size to six or seven inches in diameter, and the skin grew so thin that it seemed ready to burst. In the third month after admission some necrosed spots appeared on the skin, gradually denuding an area of two inches, and causing a thin bloody discharge. Pulsation in the mass diminished, and circulation in the femoral was cut off so slowly that the nutrition of the limb was not materially affected. Sloughing of the skin continued until there could be seen loose in the cavity of the tumor a solid blood clot about four inches in diameter. This was lifted out cautiously and with practically no hemorrhage.

The process of shutting off the circulation of the mass occupied about a month. In about two months more the cavity was entirely healed and the patient discharged cured.

Examination six months later shows him to be in excellent health and strength; no circula-



tion in the femoral, and no swelling of the limb. He tells me that he works every day in the field, and finds no bad effect from the illness.

I might have ligated the artery above the aneurism. Had I done this, the sudden shutting off of the circulation in his enfeebled con-

dition would most likely have produced gangrene of the limb. Nature accomplished the same result, and did it so slowly that collateral circulation had ample time to be well established.

A photograph of the case shows the blood clot soon after removal, divided into two halves, but showing distinctly a round opening—the site of the communication with the blood current.

Proceedings of Societies, Etc.

Southwestern Virginia Medical Society.

The session of the Southwestern Virginia Medical Society was called to order in the Masonic Hall at Wytheville, Va., at 2:30 P. M. on Tuesday, January 12th. Present: Drs. E. T. Brady, W. H. Bramblett, B. F. Cornell, J. T. Graham, P. B. Green, T. D. Hutton, J. L. Early, T. J. Hughes, Robert E. Moore, D. L. Kingsolver, G. G. Painter, M. M. Pearson, J. C. King, W. H. Ribble, W. H. Ribble, Jr., A. G. Crockett, R. W. Sanders, W. Sayers, and I. E. Huff.

The minutes of last meeting were read and approved. The Committee on Nominations presented the following applications for membership, and recommended their election: Drs. H. M. Miles, Wise, Va.; W. G. Painter, Norton, Va.; W. H. Crockford, Jr., Dorchester, Va.; W. H. Saunders, Gate City, Va.; A. T. Drake, White Forge, Va.; A. B. Greiner, Rural Retreat, Va.; J. L. Early, Woodlawn, Va.; S. M. Robinson, Woodlawn, Va.; J. K. Caldwell, Ethelsphelt, Va.; B. F. Cornett, Max Meadows, Va.; Robert E. Moore, Wytheville, Va. All were elected members.

The resolution of Dr. Priddy, changing the number of meetings to two annually, was taken up and unanimously adopted. Upon motion, the *Virginia Medical Semi-Monthly* was adopted as the official organ of the Society, and the members were urged to subscribe for that journal as such.

Upon motion, Big Stone Gap was selected as the next place of meeting, and July 12th and 13th as the time. Adjourned to 7 P. M.

At 7 P. M., upon reassembling, the President,

Dr. M. M. Pearson, delivered his address, selecting as his theme "Certain Duties of our Profession." Dr. W. H. Ribble, Jr., presented an interesting case for diagnosis in the person of a young girl aged 14, with *peculiar tumor over epigastric region*, which, after careful examination by all, and inflating the stomach with gas, was decided to be *dilatation of the stomach*. Treatment was discussed at length.

Dr. Brady read a paper upon "The Proposed Constitution of the Virginia State Medical Association," which was freely discussed. Dr. W. B. St. John's paper upon "Acute Pneumonia" was read, followed by one by Dr. T. J. Hughes, upon "Treatment of Pneumonia," both being discussed at length. Adjourned to 9 A. M.

Pursuant to adjournment, the Society resumed its session at 9 A. M. Wednesday. Dr. P. B. Green reported a case of *extensive burn* producing death in a young child. Free discussion followed, during which cases were reported by Drs. Crockett, Moore, Ribble, Hughes, Early, King and Brady.

Dr. Green then read a paper upon "Vital Statistics," which was discussed by Drs. Pearson, Ribble, Graham, Crockett, Brady and Hurton. The paper of Dr. T. F. Staley, upon "Etiology and Treatment of Typhoid Fever," was read, and discussed by Drs. Green, Graham, Crockett, Pearson, Moore, Ribble, Cornell, Brady, Hughes. The paper of Dr. A. S. Pridley, "Clinical Report of Gynecological Cases," elicited discussion by Drs. Sanders, Pearson, Green, Graham, Ribble and Brady.

After an intermission of an hour, during which time the Society visited and inspected the hospital of Dr. Graham, Dr. Grady presented a paper upon "Patent Medicines," which was freely discussed, after which the Society adjourned, to meet at Big Stone Gap July 12, 1904.

E. T. BRADY, Sec'y.

Editorial.

The Medical Recorder, of Shreveport, La.,

Is the name of a monthly journal whose initial number, January, 1904, has just been received. Dr. Oscar Dowling is editor, and has associated with him Drs. Louis Abramson, of Shreveport, and R. H. T. Mann, of Texarkana, Ark. The subscription price is \$2 per year. *The Recorder* bids especially for the patronage of the doctors in Louisiana, Texas and Arkansas, and if the copy before us is a fair sample of what will follow, we predict for the publishers a most successful career.

Health Officer Assaulted in North Carolina.

Dr. Thomas S. Faucette, of Burlington, N. C., the efficient superintendent of the Alamance County Board of Health, was murderously assaulted on the night of January 9, 1904, at Haw River, N. C., while inquiring into the disinfection of houses that had contained smallpox patients. He is reported to have been seriously injured. A mill operative is alleged to have without provocation struck Dr. Faucette on the head with a rock just after he had been spoken to by the doctor about disinfecting his premises.

Haw river is a cotton factory district, and the operatives at that point are a densely ignorant class. In fact, we heard of a woman there who, when asked what was her husband's name, said it was "Jim." Questioned further, "Jim what?" She said she thought it was "Jim Bletcher," but was not positive, as she always called him simply "Jim." It was afterwards learned that he was James Blanchard.

It is no wonder that such people do not understand the value of vaccination and other such precautionary measures, even resenting attempts to so protect them—fearing the loss of limb or life, as is often suggested by certain unscrupulous persons.

New Orleans Polyclinic.—Seventeenth annual session opens November 2, 1903, and closes May 28, 1904. Physicians will find the Polyclinic an excellent means for posting themselves upon modern progress in all branches of medicine and surgery. The specialties are fully taught, including laboratory work. For further information, address, New Orleans Polyclinic, Post-office Box 797, New Orleans, La.

"Yes," said the young doctor to his wife, "I felt greatly worried until the climax was passed."

"Will he be out soon?"

"No," said the young doctor, "not until the day of the funeral."

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Original Communications.

AN UNAPPRECIATED SOURCE OF TYPHOID INFECTION.*

By PAUL B. BARRINGER, M. D., University Station,
Charlottesville, Va.,

Recently Chairman of the Faculty of the University of Virginia.

The "scenes of confusion and creature complaint," which the American traveller beholds with such wonder at every European railway station when the doors of an incoming express are unlocked, tempts him to patriotic self congratulation that among the good things American, not least is the railway water-closet.

A call to look after a typhoid fever patient, on a railway train, a few years ago, first drew my attention to certain possibilities of enteric infection from these same closets which have been almost ignored by the profession.

In the case in question the railway journey was one of several hours, and the diarrhoea and straining were so constant, that, in the language of the patient himself, he had been "on the stool for a hundred and fifty miles." This peculiar standard of measurement, infection in miles, doubtless first suggested the idea embodied in this paper, viz.: The infection of the road bed of our American railways through the discharge of typhoid patients travelling over the road while in the infective stage.

The infectiousness of the typhoid stool even in the early stages when patients are well able to travel and hardly know they are ill, is well established. The prolonged presence of *bacillus typhosus* in the urine of typhoid convalescents, going about, is equally well known. The fact that all American railway lines use closets which discharge all fecal matter passed on the train by passengers directly upon the road-bed,

is not so generally known to medical men, but it is none the less a fact.

If these things then are true, the only chance of ultimate escape for any foot of road-bed must lie in the hope that travelling typhoid patients are rare—a hope not well founded, as the following figures will show. In the United States six hundred million railway tickets are sold annually, representing over seventeen thousand million miles of travel, to be used on the two hundred thousand miles of railway in this country. It will be seen that the average distance travelled on each ticket—i. e., travelled by each passenger, is about twenty-eight miles. At this rate some seven thousand passengers, each on a twenty-eight mile ticket, would be required to cover once each mile of the two hundred thousand miles of road-bed in the United States.

But as over six hundred million passengers travel each year over this same road-bed, it will be seen that each mile will be covered in this time by over eighty-five thousand persons. How long do you suppose a road-bed, receiving the discharges of eighty-five thousand passengers annually directly upon its surface, would escape infection with such travel as this?

Further light may be thrown upon this problem by remembering that the death rate of typhoid fever for the United States is 46.2 per hundred thousand per annum. As only about one typhoid patient in every ten dies, this would mean some 460 cases of typhoid each year for every one hundred thousand of population.

Now, I believe that the proportion of typhoid patients that travel, either to their homes during the early stages of infection, or back to their homes during the equally infectious stage of convalescence, is very large. Contract doctors send them away from the mines, factories, etc., once a diagnosis is made; summer resorts and other hotels show them the door even on suspicion, and when we remember that the

*Read before the Medical Society of Virginia during its thirty-fourth annual session, held at Roanoke, Va., September 15-17, 1903.

years of typhoid susceptibility are also the years in one's life when the lust of travel burns freely in the blood, we will understand why we hear of them so often on the rail. If the proportion of sick and well on the railway is anything like the proportion of sick to well shown above, viz.: four hundred and sixty typhoids to the hundred thousand of population, then with eighty-five thousand passengers to the mile annually, we would have over three hundred and seventy cases of typhoid travelling over each mile of road in the United States each year. Would not a few years of this give almost complete infection even to a new road, and if so is there any hope that any of the old road-beds in that State, twenty, thirty, forty and even fifty years old as they are, could remain free from permanent infection? I say permanent infection because I believe that in the well drained but cool and moist soil under the ties and ballast of a modern railway road-bed, baptized day after day and year after year with the albuminous fluids of human excrement, the *bacillus typhosus* once planted, in this natural culture medium, will live forever, revitalized at intervals by new infection perhaps, but, in the meantime facultative enough to meet seasonal and other changes and remain potent. I further believe that the old trunk lines of the United States are already infected for practically their entire length, and unless some radical change is made in dealing with railway excrement this country will ere long be threaded and traversed in every direction by long and narrow but none the less deadly zones of enteric infection—a permanent and ever growing menace to national health. Here in America, in a new land, thinly populated, we have already a death rate of 46.2 per 100,000, while England, an old country, densely populated and crowded, has a death rate of only 18.0. It is too much to believe that this great difference is due solely to the peripatetic water closet, but if the closet were abolished in America, as it should be, I feel sure that the close approach of our figures to the low English death rate would surprise us.

In advancing proof of infection of these road-beds it must be borne in mind that there is at present in every community a certain, constant and very appreciable amount of typhoid fever which cannot be traced to any known source. For several years I have worked on these cases, when opportunity offered, and I

have been myself surprised at the number in which the trial led to some recent connection with a railroad.

Infection of a long, narrow strip of earth, like a road-bed would be expected to influence two distinct classes of persons: first, those living more or less permanently along the line of road, and, second, those usually living elsewhere whom the necessities of travel or vocation have brought into transient or temporary contact with the road and its influences.

As regards influence upon the first class, the permanent inhabitants, we turn at once in mind to the direct infection of streams, brooks, creeks, and rivers which pass under the line of roads, or as a secondary consequence to the infection of springs and wells which flow from the area crossed by the infected road-bed. The danger to this class of population must necessarily multiply with the increase in travel and contamination, but so far little or no attention has been paid to guarding against such infection by those entrusted with the care of public health. As I came to this convention, my train, with closets certainly open and perhaps active, crossed a river not two hundred yards above the point of intake for the water supply of a city of thirty-five thousand inhabitants. The possibilities of an acute general infection in such a city are manifest and it may perhaps yet have its name become a by-word and a reproach among cities, like Plymouth, Maidstone, Lausen, Ashland, etc., for all the world hears of the great epidemics. In less degree this infectious influence and this danger exists for every town, village and farm-house along every line of railroad, and the only reason we have not found it is because we have not looked. We will travel up stream ten miles to look for a house with a case of typhoid that might have produced our infection below and ignore the railway line which parallels the stream the entire distance and crosses it at intervals.

But immense as the possibilities of road-bed infection may be for the people along the "right of way" a danger far more difficult to avoid and none the less potent threatens the people that travel the infected road.

It has long been observed that a journey, usually a railway journey, increases one's chances of typhoid fever. Even the laity have observed this and the family physician has the stock explanation ready in ascribing it to "contaminated water taken in travel." For some

years, with doubt in mind, I have carefully observed the filling of the railway tanks in travellers on all roads, that have any claim to be called passenger lines; they invariably fill the drinking water tanks in the cities or towns where they can get city fire pressure for prompt filling. This being the case, why should we have more fever among those who drink this water in travel than among those who drink it at home. I know that we do have more, for any practitioner with experience in towns where railroad employees form any considerable part of the population will tell you that railroad employees are particularly prone to typhoid infection. Bearing upon this same subject is the fact that travelling salesmen, "drummers," are also prone to typhoid. Within the last year I heard the president of a large corporation employing many salesmen make the statement that his firm had several salesmen incapacitated with fever every fall. In spite of all this I still found it hard to believe that water which was seldom or never charged with misdemeanor at home could do all this mischief on the train.

My first ray of light came from a railroad hospital where the interne told me that "nine out of ten of our typhoid cases are track men." By track men he meant section bosses and section "hands," whose labors are directed towards keeping the road-bed in good condition, taking out old ties and putting in new, leveling up the general surface and redistributing the ballast, etc. Why did this class have more fever than brakemen, conductors, etc.? They seldom took a drink of "city water" of the kind here suspected.

The report of the United States Army Commission chosen to study the causation and methods of spread of typhoid fever in the camps of volunteer armies of the Spanish-American war had been accepted by me as proof conclusive of the possibilities of typhoid infection through contaminated dust. So when in one hour of summer travel I saw from an observation car four gangs of trackmen in turn swallowed up in receding clouds of stifling dust I felt that I was on the right track at last, for the solution of this problem. I subsequently found that these men were exposed not only to the dust and dirt thrown up by their "billies" picks and other tools, but every half hour, day after day, they lined up beside the track to let some train pass, and then stood choked and blinded by the dust for several minutes after it

had passed. Their drinking water, obtained as a rule, from some well, spring or stream near the track, was usually carried in an open bucket, which, with its tin cup, hangs beside the track to receive its quota of the disturbed road-bed dust. Of course the high sick rate among these track men may be due simply to the fact that their water is usually drawn from the drainage area of an infected road-bed; but if this water were the sole cause we would still look in vain for the source of the infection producing travel typhoid in drummers, train crews, etc. I am convinced that railroad typhoid is traceable to one common cause. I believe the high sick rate of the track men is due to direct infection from handling the contaminated ties, earth and dust of the road-bed, supplemented by constant exposure to the clouds of dust raised by passing trains. It is my belief that this same dust is the unappreciated source of typhoid infection in railway travel, as this and this alone will explain the facts as they exist for track men, train men, travelling salesmen and the general public, alike.

The only practical cross-tie, the wooden tie, is unfortunately rapidly perishable, and the whole genius of railroad construction has been directed towards creating such conditions of road-bed as will best preserve the tie. To this end the track is now always well drained, the ties are elevated on broken stone, or if that is not available cinders from the roundhouse or yards is used. On such a bed as this fecal matter dries very rapidly and once dry the forces of disintegration move apace.

An examination of any section of passenger road will show two distinct forms of track pollution depending upon the type of closet used on the train. The first type of closet usually found on "day coaches" and those doing local traffic, consists of a slightly conical metal tube with a simple seat and lid at the upper extremity and open below. There is no water used in this closet and it delivers fecal matter and urine direct and unmixed up on the road-bed about the ends of the ties. I say about, because complaint in days past by section hands and bosses against handling soiled ties has caused the car builder to give this tube an outward turn to make it clear the track, and as this brought the open end of the tube over the truck frame or stay chains we sometimes find these tubes with a double turn, outward and forward;

hence the fecal matter nearly always falls on the side of such an oblique shaft, clings there and by the vibration of the train what naturally would infect a few rods is doled out the track for miles, and falling in very small masses is blown all over the road-bed.

The other type of closet found—the so-called railway “water closet”—is purely an imitation affair intended to impress by its resemblance to the genuine hygienic type, and also to keep the cold air out of the car. These are found in the better class of coaches, parlor cars, sleepers, etc. Here the open metal delivery tube has at the upper end, in place of the simple seat, a hinged seat and cover fitted over a bowl closed below with an old-fashioned “pan” seal. On raising or lowering the lid of the closet the pan is tilted and the excrement discharged into the open tube at the same time water is turned on, washing the tube reasonably clean. It will be seen here that water is first mixed with the natural discharge in the pan and then the softened mass is washed out with more water. The result of this is that such discharges sink at once into the road-bed, leaving only the spattered paper pulp to mark the place of fall. It will be noted that while both closets are deadly, in that they discharge human excrement undisinfected upon the roadway, the water closet type makes for the saturation of the soil of the road-bed, while the simple closet gives the superficial deposits. The latter, dried, broken and driven by the fierce blasts which sweep the track, forms a constant and appreciable organic factor in the dust which we find ever present in travel. If now the fecal matter constituting this dust chance to be that from a typhoid patient and containing viable bacilli we can see that the contents of the drinking tanks and cups, the fruits, candies and other foods upon which this dust settles become at once dangerous. This is unlike ordinary road dust—it is coarser and more granular—because of its peculiar formation, and it does not stick to the hands unless moist.

The passage of a train at high speed over the rails even in still air creates most violent currents and draughts particularly close to the ties where pilot, fire box and numberless brake beams skim the ground and force the air out from under the car carrying with it not only dust but even coarse particles of cinder. A wind of fifty miles an hour could not do more

for the limited area covered by the ties and this dangerous dust once clear of the running gear that disturbed it is swept by strong lateral currents backward to afflict most seriously the rear coaches where we pay an otherwise justifiable premium for safety.

This is my theory of infection, and while it, to my mind, harmonizes all facts known of typhoid from Pettenkofer to Widal—I put it forward now only as a working theory to explain, not epidemics, but the steady seasonal presence of typhoid all over the land, which has never yet been explained. Over fifty per cent. of all cases of this fever occur in the months of August, September and October—these are first of all the travelling months; they are the hot and dry, and hence dusty months; they are the fruit and ice and drink months; and this, I believe, is exactly why they are the typhoid months. This question can not be settled by simple bacteriological examination of the soil. This is so difficult as to be impossible. The question is one for the clinician and not the pathologist. As throwing some light on it I will cite the following facts:

At the University of Virginia we have between six and seven hundred students, nearly all within the age limits of prime enteric susceptibility. These students come to us in September and remain till the Christmas holidays, when they go either to their homes or to visit some city to return in January; a large proportion of them also make a railway journey at Easter and yet this singular fact exists—in fifteen years we have never known the Easter holidays to bring back to us a travel case of typhoid; only once in this time have we had a case follow the Christmas travel, but in the fall pilgrimage to college, (one way only), we see nearly every fall one or two travel cases, and one year—’98 I believe it was—we had three.

By travel cases I mean cases in which the first manifestations appear just about a fortnight after a railway journey. Had they been infected after arrival there would have been found subsequently a local cause and other cases would have appeared; had they been infected earlier they would not have left home. So when two or more men, living in boarding houses widely remote and using different milk supply, show manifestations of typhoid on the same day, and that day just about two weeks after a hot, dusty railway journey of several

hundred miles, I call that travel typhoid, because I cannot but believe it was acquired in travel.

If these things be true what is the remedy? Is it to ballast the road till there is no dust? I am persuaded that feces on the cross-tie or on the surface of the ballast is in the most dangerous site for ready infection, but the contained bacillus in such a place is shortlived, while the water-soaked feces from the Pullman which sinks down at once through the ballast, out of the sunlight and free air to the cool, moist earth to become dry only in the late summer and fall, furnishes the condition for permanent infection. Ballast at least harbors the infecting agent. Is relief to be obtained from the use of crude petroleum? Dust in itself, while disagreeable, is not dangerous. Coal oil will not prevent infection of the road-bed drainage area even if it stops the dust.

The remedy lies in a retention closet which will retain safely and without offense to the passengers all dejecta passed on the trip and at the end of the trip, in some suitable and approved place, these closets can be emptied of their contents and cleaned. For the poorer roads, with mediocre equipment, a good metal-lined, dry earth box would suffice, while for the better class of roads their mechanics could without trouble devise a retention water-closet, using a plunger instead of a pan. Such a closet would add little weight, would give no offense to the senses of passengers, and it also could deliver its material safely at an appointed place. These things are but matters of detail. The direct deposit of fecal matter which might be infected with the organism of enteric fever, cholera, uncinariasis, or a dozen other possible sources of human contagion, on the soil daily without regard to any surroundings or consequences should be forbidden. It is a hygienic anachronism and it must go. European roads, having few or no closets on their trans, escape these difficulties at great discomfort to their passengers. We can have both comfort and safety at little expense. Infected road-beds relieved of their annual supply of new infection and natural culture media will in time be starved out, so to speak, but under present conditions the menace to health grows with time, grows with increase of population, with increase of traffic, with increase of disease, is self-perpetuating and must be, for these very reasons, stopped.

DISCUSSION.

Dr. L. G. Pedigo, Leatherwood, Va.: The main point brought forward in this paper is a new one on the most important subject now before the medical profession. Since Dr. Barringer has expressed it all so clearly and forcibly we are wondering why some of us had not thought of it before. There can be no two opinions about the soundness of the views expressed, or as to the simplicity and practicability of the remedy proposed. I simply wish to add one point, viz.: that the subject matter of this paper is of especial interest to the people, and therefore to the Board of Health of our own State. We are confronted with a state of affairs which exposes us, in a peculiar way, and in an unusual degree, to the dangers incident to the transportation of typhoid fever cases. The fact has been fully proven before this Society in years past that the most virulent type of typhoid fever prevails in the Alleghany mountains. That section of our State is studded with mining and other industrial enterprises all employing a large number of laborers. In great measure these companies draw upon the Valley and East Virginia for their labor. The sanitary conditions are bad and they have the co-operative system of medical service. When a negro is taken with fever the doctor naturally advises him to go back to his home where he can have more comforts and better nursing. Incidentally this advice, when followed, relieves the doctor of the burden of treating a case of fever a month or longer at the rate of fifty cents a month, and imposes the same burden on some doctor in another part of the State, usually for *no* compensation. Another result is the infection of a large number of localities, hitherto free from fever. Thus the Alleghany mountains have become a hot-bed for the culture and distribution of typhoid fever germs to the utmost limits of the State, a condition which constitutes a standing menace to the great populations of the Valley of Virginia and of the country east of the Blue Ridge. This great evil is shown up in a new aspect, in the light of the very interesting paper we have heard to-day. Dr. Barringer has suggested the only practicable remedy for the peculiar danger he has pointed out. The balance of the problem imperatively demands solution.

There should be no quackery in Virginia.

INTESTINAL OBSTRUCTION FROM MECKEL'S DIVERTICULUM.*

By STUART McGUIRE, M. D., Richmond, Va.,
Surgeon in Charge St. Luke's Hospital.

Whether admitted or not, there is undoubtedly a general belief among surgeons that cases occur in groups; and I confess the superstition has been brought home to me by three cases of intestinal obstruction, due to Meckel's diverticulum, that have recently occurred in my practice. The symptoms, pathologic conditions and final results were so similar in all that it is unnecessary to give a separate history of each. All were men between twenty and thirty years of age; all were taken with sudden abdominal pain, followed by obstruction, distention and peritonitis; all were brought to the hospital practically moribund from sepsis; all were diagnosed as fulminating appendicitis; all were operated upon, and all died.

In each case, when the abdomen was opened, there was the escape of a quart or more of bloody serum; in each the bowels were inflamed and distended with gas, and in each a gangrenous diverticulum was found, originating from the ileum, extending upward and inward to be attached by its tip to the mesentery, and having beneath it an incarcerated coil of small intestine. The specimen I exhibit was removed from the last case. It is 7 inches in length, one inch in its smallest diameter and is expanded at its tip into a sacculated cavity.

The rapidity with which a strangulated diverticulum kills, and the necessity of surgical intervention even more prompt than in appendicitis, has led me to study the available literature on the subject and to report the rather unsatisfactory result.

In early fetal development the intestinal canal communicates with the vitelline sac by means of the vitelline or omphalo-mesenteric

duct. This duct begins at the lower part of the ileum and passes through the abdominal wall at the site of the future umbilicus. It usually becomes obliterated at the end of the sixth week. If it does not undergo atrophy a diverticulum results shaped like a glove finger, with its base opening into the bowel and its tip either floating free in the abdominal cavity or attached by a fibrous cord to the umbilicus. Meckel's diverticulum varies in length from one to ten inches, and in diameter from a scarcely permeable tube to a protrusion the caliber of the small intestine. It is usually cylindrical in shape, but may be sacculated or expanded into cavities. The distal extremity may be smooth and tapering or it may be rough and bulbous. It is usually located about three feet above the ileo-cecal valve on the convex side of the intestine opposite the insertion of its mesentery.

If free, the distal end may become adherent to any place within the abdominal cavity its length permits it to reach. Its most frequent point of attachment is the mesentery, although a case is reported where it was fastened to the bladder.

When Meckel's diverticulum is connected with the umbilicus by a fibrous cord it may cause intestinal obstruction by a loop of bowel



becoming twisted around it. When it floats free in the abdominal cavity it may cause obstruction either by encircling a bowel and becoming mechanically locked by its club shaped extremity, or by the free end becoming at-

* Paper read at meeting of the Richmond Academy of Medicine and Surgery, January 12, 1904.

tached to a fixed point by inflammatory adhesions and a loop of intestines being caught beneath it.

Meckel's diverticulum is said to exist in about 2 per cent. of all bodies examined. I have accidentally observed its presence several times while operating for other abdominal troubles. As the victim of the abnormality usually goes through life unconscious of its existence, and as only a small per cent. have intestinal obstruction, the number of cases reported is not large.

The symptoms due to strangulation by the diverticulum are sudden in onset. Pain is severe and persistent and referred chiefly to the region of the umbilicus. Vomiting appears early and may become stercoraceous; tenesmus and discharge of blood from the rectum are absent; constipation is as a rule absolute; the abdominal wall is not rigid but later becomes tense from distension; fever and the attending symptoms of sepsis begin with the development of peritonitis, and sometimes there is tenderness or a perceptible swelling near the umbilicus.

All writers admit that it is impossible to make a positive diagnosis in a case of intestinal obstruction due to the diverticulum, or to differentiate it from intestinal paresis due to peritonitis of appendicular origin; hence the importance of early operative intervention in doubtful cases.

Ochsner's method of treatment of peritonitis, while valuable in appendicitis, would prove uniformly fatal in mechanical obstruction. The abdomen should be opened in the middle line and the lower right quadrant first examined. If there is a large quantity of bloody serum free from the admixture of pus a strangulated diverticulum will most likely be found. As soon as it is located the tip should be separated from the tissue to which it has become adherent and the obstruction relieved. The patency of the bowel should then be demonstrated and its walls carefully examined to see if they are damaged sufficiently to necessitate resection. Finally the diverticulum should be removed. If it is small, it may be tied and amputated like an appendix, the stump being buried or covered with peritoneum. If it is large it would be unsafe to trust to a ligature, as it might cut through and cause death from peritonitis at a time when the patient was regarded as out of danger. If the size of the diverticulum approaches that of the ileum, from which it originates, it should be amputated and the opening closed with the same

care and by the same methods as an intestinal wound of the same size from other causes.

DANGERS OF THE X-RAY OPERATOR.*

By JOHN T. PITKIN, M. D., Buffalo, N. Y.

When for the first time one beholds an X-ray tube in operation, the mild green or yellowish color of its active hemisphere, the blood-red or orange color of the inactive hemisphere, which can be obtained with strong condenser discharges, the ruby redness of the target, or the light blue color of the cathode stream, a blue cloud, hovering behind the target, the green, circular, aurora borealis, or green, scintillating, radial aurora australis, the bright green, dancing spots of the cathode splash, the circular, green zone of the tube reversed, the bluish twinkle of its fading light, the slower dying out of the incandescence of the target, and the target's own modicum of ordinary light, the ever changing, ever expanding circle of colors on the cathode cup, the bluish marking of the tube, which has seen much service, perchance the pyrotechnoidal display of the punctured tube—he is liable to exclaim, how beautiful!

As he observes the delineation of bones, viscera, or foreign bodies upon the fluorescent screen or photographic plate, its curative power in skin affections, painful disorders, cancerous, tubercular and other malignant diseases, he will in all probability say, how marvellous!

Should he strive to fathom its physics, its *modus operandi*, ask himself of what form of matter the cathode and the anode streams consist? Whether in the working of the tube there is transmutation of matter from one elementary form into others, or of matter into energy? All of the colors of the rainbow, depicted on the concavity of the cathode cup, how are they formed? From whence came they? Of what composed?

Are there separate and distinct rays emitted from the tube, that cause burning, others fluorescence and still others photographic effect? or do the same rays produce all of these phenomena? What rays possess the healing power?

*Read in part verbatim, in part by outline, at the meeting of the American Roentgen Ray Society, held at the University of Pennsylvania December 9-10, 1903.

Where and how does the X-ray have its birth? Of what does it actually consist? (1) If in the old form of Crook's tube, without a target, the x-light is generated in the glass wall of the tube, wherever it is subjected to bombardment, and if at the place of bombardment, heat and a green fluorescence always accompany the generation of the x-light, and if in the form of tube now employed, a portion of the cathode stream, passes by the target, or if the target is displaced, and the entire stream passes by and generates x-light likewise by the bombardment of the glass wall of the positive end of the tube, accompanied by the green fluorescence (which on account of its position and shape I have christened the "aurora borealis" of the X-ray tube) with the usual modicum of heat, then does it not follow as a corollary that wherever there is a green fluorescence of the glass wall of the tube, with the production of heat, there the X-rays are always generated, and the glass walls surface is the seat of molecular* bombardment?

(2) If the rays of Röntgen have their birth at the target, why do they not shine through that structure as they do through the glass wall that is subjected to bombardment? Can the target reflect rays that are not reflectable, refractible, or defractable?

(3) Why are the afferent target rays convergent, the efferent target rays divergent (leaving out of consideration the effects of the manner of their respective construction), unless the former partake of the character of the negative, the latter of the positive, electrical brush discharge?

(4) If there is not an anodal stream, how shall we account for the bluish marking of the glass wall of the active hemisphere, which is proportionate, to the amount of service, a given tube has seen?***

(5) If the x-light is not generated in the glass wall, why does its volume increase with the size of the tube employed, and consequently the extent of the glass surface, exposed to the anodal influence, while the size of the target is relatively unimportant?

(6) If the x-light is generated both at the target and in the glass wall, would not the photographic plate show a double picture?

*The word atoms, or corpuscles, or electrons, can be substituted for molecules, according to the fancy or belief of the reader.

**How shall we account for the green fluorescence and the thermal effects?

(7) If it is the X-ray that causes the glass wall of the tube to fluoresce with a green color, why does it not cause the same phenomenon in a piece of glass held in any portion of the X-ray field?

Are infinitesimal particles of glass or other forms of matter projected from the tube into the X-ray field? (Nichola Tesla was one of the first to advance the hypothesis that matter was thrown from the tube outwards into space.) If not, why is the X-ray inflammation of the skin nearly always upon the side of the parts presented towards the apparatus? Why does the clothing or a thin aluminum screen afford so much protection to the bodies of operators and patients? The dermatitis may end abruptly where the clothing has covered the person.

Is there some unknown radio-active element, like radium, polonium, thorium, uranium and helium, in the glass wall of the tube—a hypothetical röntgenium, if you please—which, when subjected to bombardment, emits radiant energy or radiant matter? If this is not the case, why should a new tube fluoresce with a bright grass green color, become duller, more like an olive green, then yellowish, which in turn fades with months and years of use?

(2) Or why should the radio-activity of an adjustable vacuum tube gradually decrease after a year or more of service, although the target glows with the usual amount of redness?

(3) How shall we account for the bluish, greenish and yellowish tints (not pyro-stains) sometimes seen in the developed negatives?

(4) Why does the new examining screen follow somewhat the same change of colors as the X-ray tube? Will the incorporation of radio-active elements in the glass wall of the tube multiply its present capacity and its therapeutic effects? If so, what a promising vista of future possibilities opens before the radio-grapher!

Why should an eight inch tube, exhausted by use, recover by rest much more rapidly than a smaller tube? Upon asking himself all these

*Additional notes taken at the Philadelphia meeting of the Röntgen Ray Society.—Dr. James P. Marsh, of Troy, N. Y., reported that the soles of his feet had been burned—their position under the operating table, the Doctor sitting near the patient. As a result of the condition of his feet the Doctor was obliged to be carried about by attendants. It was explained at this meeting that the dermatitis probably came from the reflected rays of Goodspeed.

Dr. Henry K. Pancoast stated that when a Crook's tube collapsed a bystander sometimes felt as if he was in a shower of small particles.

and as many more equally pertinent questions they may suggest, he must invariably remark, how profound!

If he injudiciously ventures too near the excited tube, or remains in the weaker zones of the field too many days, months, perhaps years, and if in consequence he sustains X-ray inflammatory effects, with their complications and sequelæ, he is liable to ejaculate, how infernal! For beautiful, marvellous, profound and infernal are the attributes of the X-ray tube.

It is with the last subdivision, or the untoward effects of the X-ray upon the operator, with which the present paper is principally concerned.

X-ray inflammation.—This danger to the operator *increases* with—(1) nearness to the tube (in a compound multiple ratio); (2) number, frequency and duration of exposures; (3) size, hardness and degree of excitement of tube; (4) poor bodily condition; (5) an injury, blow or cut on parts slightly affected; and (6) number of previous attacks, each attack leaving him more vulnerable.

Conversely, the danger *decreases* with—(1) distance from tube; (2) infrequent and short exposures; (3) softness of tube, provided it is under-excited; (4) interposition of substances, clothing, screens of copper plate, iron, tin, zinc, aluminum, glass plate, etc., their density, thickness and other qualities as yet unknown; (5) vigorous bodily condition; and (6) a position behind the target and static machine, from whence rheostat and spark gaps can be operated.

The relative danger of different types of tubes, and how we judge by the appearance of a tube the degree of penetration of its rays without the employment of the fluoroscope—all other conditions being equal, a hard tube or one in which the free concave surface of the cathode cup has a light blue transparent circular spot about the size of a silver dime, with a prismatic ring of colors at the outer border of the blue, the target thereof glows with a redness throughout its entire extent, with a reddish white centre, the glass wall of the active hemisphere, covered with a translucent, blue deposit, is the most dangerous, its rays most penetrating.

A medium tube, or one having a cathode cup, colored with a dark blue central spot about the size of a five cent silver piece, and having a target that glows with uniform redness, a blue cloud hovering behind the target, is less dangerous, its rays less penetrating.

A low tube, or one having a cathode cup colored seal brown, of a golden hue, or a minute, blue-black central spot with a red border to the blue, having a blue cathode stream and a green aurora borealis—i. e., positive or northern green circles at the positive end, the stem of the same extremity having a green color, is least dangerous, its rays least penetrating.

The classification of tubes into hard, medium and soft is very general, because in practice we are using tubes of every degree of each subdivision; but it will answer our present purpose if I make special mention of the extremely high and extremely dangerous tubes that are hard to excite. Once started, they light up irregularly, accompanied with a crackling sound; they have small, dancing green spots formed by the splashing of a portion of the cathode stream against the wall; they also have a green, aurora australis; the outside of such tubes becomes rapidly covered with dust and elementary carbon; they are enveloped in a strong, high tension, magnetic field, which electrically charges all objects in the neighborhood—such tubes emit rays of an extreme degree of penetration.

The relative danger of these tubes will change when we have stronger exciting apparatus. The latent capacity of the softer tubes has (probably) as yet never been utilized.

The length of spark a given tube can back up is not mentioned, because the solidity and thickness of a spark are more essential to the efficient operation of a tube than its length. At least this has been my experience.

For purposes of study, let us divide the action of the rays of Röntgen, upon the operator, into four arbitrary stages: (1) Preparatory stage, or stage of first impressions; (2) premonitory, or threatening stage; (3) stage of inflammation and disintegration; (4) stage of chronic skin diseases, etc.

Preparatory stage, or stage of first impressions.—As you are all well aware, the operator receives no warning from the tube, experiences no sensations while being injured. After a time there is a little change of color of his hands and face. This he may erroneously attribute to the action of the solar rays. "His face is like the tan" (Longfellow in "The Village Blacksmith"). A few papules or pustules, with itching here and there, or bran like scales, to a local skin trouble (prurigo, acne or pruritus), a little swelling of the hands and features to a circulatory disturbance, the fall-

ing out of his hair, to senility, when, in reality, they are caused by the Röntgen rays, which are rendering the integument more and more susceptible to their action. Such symptoms should be looked upon as harbingers of an impending storm. During a long period of increasing susceptibility the operator may imagine himself an X-ray immune, as if by some special dispensation he, like Shadrach, Meshach and Abednego, can walk in the fiery furnace (of the X-ray field) and not be burned.

Premonitory, or threatening stage.—The symptoms of this stage are itching, warmth, local diaphoresis, a mild seborrhœa, partial anæsthesia, luxuriant or deciduous hair (in hirsute people the shedding of the hair may be the first indication of the ray's effects), cutis anserina (goose skin), very small, shot-like bodies in the cuticle, a glossy appearance of the parts as if they had been varnished, œdematous swelling of the subcutaneous cellular tissue, causing the hands and face to become puffy, as they do in Bright's disease, rendering the fingers and palm of the hand stiff and awkward, effacing anatomical markings, and giving a general rotundity of contour.

Punctate red spots, a few and scattered (discreet) or many and close together (confluent), in groups or diffuse patches, may occur. Some are raised, others on a level with the surface. They may cause the skin to become as rough as the surface of a nutmeg grater. Some of the minute elevations may be colorless; they can be seen by looking at the parts obliquely; they can also be discerned by careful palpation; there is a flushed look to the skin about them.

Discoloration of the skin.—Red, reddish blue, yellow, brown or black. The first two colors may or may not disappear, the others always remain on pressure. Pigmented portions of the body are especially affected by pigmentation. The same is true of very dark individuals.

It is by keeping diseased parts of the patients who have malignant ailments in this stage of irritability—œdema, tanning or redness and partial anæsthesia—that the greatest number of cures can be effected. From this stage the operator may recover, with or without desquamation. Exclusion of all forms of actinic rays, a good sweating of the parts, and crowding all the other emunctories will help to restore the parts. Otherwise as the result of further exposure, an operation or an accident, such as a

cut or blow to the irritated parts, the process will slowly, insidiously merge into the stage of chronic inflammation, with its "cardinal signs, calor, dolor, ruber, tumor and functionless" (quotation from lectures of Dr. Roswell Park, on Inflammation).

Stage of inflammation and disintegration.—The pathognomonic symptoms of X-ray inflammation as experienced by myself after seven years' exposure in the X-ray field were *extreme itching*, with constant desire to rub, scratch or dig into the affected parts. If the itching of the alleged seven years' itch could be crowded into a few months' time it would not be more aggravating.

Eruptions.—Scarlatinal form rash, military papules, pustules and vesicles came in successive crops. They resulted from the more or less destructive inflammatory involvement of the follicles and their cellular elements. Like thorns in the flesh, or other foreign bodies, they were thrown off, leaving the skin honeycombed with small ulcers, oozing a hydro-serous discharge alkaline in reaction. This discharge may be odorless or have a putrid smell, according to the severity of the process. Some of the hairs could be drawn from their pockets, as they had been loosened by electrolysis.

Exfoliation of the skin.—Fifty, a hundred times, or more, the epidermis was thrown off in scales of various sizes, shape and consistency. In places slightly affected, the desquamation was scarlatinal form, the disease painless. Where quite severe, the scales were at first thick and macerated, pseudo-membranous. Late in the disease the scales became desiccated and appeared as they do in many forms of skin disease. If the scales were torn away, the surface bled freely, from the points of their attachment.

Inflammatory mounds.—Where the process is quite severe but attacks circumscribed areas more severely than intervening spaces, inflammatory mounds appear capped with a white membranous patch. In time the patch breaks down, leaving a ragged edged crater-like opening. A common position for these mounds is over the articular surfaces, but they may form upon the dorsum of the hand, the fingers and in other localities.

Extensive ulceration.—If the inflammatory process is severe, the eruptions, small ulcers and mounds, all become confluent; the surface breaks down, forming large ulcerated excava-

tions, with a raised border. Their central portion may be either naked or covered with a thick whitish pseudo-membrane. Under these conditions the suffering is intense, the discharge sanious and offensive.

Pain and suffering.—For a description of the pain and suffering, hyperæsthesia and paræsthesia, no language sacred or profane is adequate. The sting of the honey bees or the passage of a renal calculus is painful enough, but are comparative pleasures, because being paroxysmal they have a time limitation. There are extreme tenderness to the slightest touch; hot and cold waves and flashes; warmth, tingling, pricking, throbbing, stinging, crawling, boring, and burning sensations, as if the parts were on fire and contained bugs and other living things—feelings as if the anatomical structures were being moved from one position to another. All of these sensations are proportionate to the depth of the inflammatory process.

All forms of radiant energy, light, heat, magnetism, ultra-violet rays, etc., increase the suffering. The parts are irritated by soap solutions or attempts to use them for any purpose. The suffering is also augmented if the affected members are allowed to become dependent; hence the afflicted operator holds his hands high above his head, even sleeping with them in that posture.

If the inflammation in his hands is severe, muscular action will be temporarily lost, the fingers immobile. He must be dressed, undressed, and fed by attendants.

Healing of the parts.—There are abortive efforts of the parts to heal. They heal over only to break down again, or healing in some places, they break down in others. No healthy scabs form over the ulcers. No laudable pus, so called, appears. The formation of granulations and scar flesh is defective; consequently the processes of repair are indolent, ineffectual, requiring months to restore the parts. Eventually the epithelial cells will spread from the margin and islets over the ulcerations, and the injured parts are thus supplied with a thin investment. Muscular power returns. Whenever the hair is restored, as it frequently is, it will return more vigorous.

Physiological rest, an elevated position, exclusion from all forms of actinic rays, the turning away of desiduous material with dioxygen, the employment of formaldehyde ten per cent.

solution as an antiseptic wash, and a thick dressing of equal parts of vaseline and powdered starch, evacuation of pustules, and the wearing of kid gloves for several months after the acuteness of the attack has passed, will afford considerable relief to the sufferer. Dr. Robinson, of Philadelphia, uses picric acid. Dr. Duhring, of the same city, employs the lead plaster.

I quote the following illustrating an extreme degree of chronicity of X-ray inflammation; also showing how the operators who work with the most powerful apparatus and the greatest number of hours per day are usually the greatest sufferers: London, August 9, 1895, via Associated Press: "Two doctors belonging to the London Hospital have been affected by X-rays in a manner similar to that of the assistant of Thomas A. Edison, and have been compelled to abandon their work. They were engaged for a long time in making examinations of and manipulating diseased parts while X-rays were directed on the patients. When they began to suffer they tried gloves on the backs of which lead foil was sewn, but these impeded the movements of their hands and were discarded. One of the operators ceased operating under the rays eighteen months ago, yet his hands have improved little despite constant treatment."

To return to my own case, large red blotches and acne pustules appeared upon my face and neck, with a burning sensation, followed in time by desquamation and restitution. The parts were left sensitive to light, heat, etc.; they for a time caused them to redden and peel in furfuraceous scales. My left hand was much involved, hundreds of minute abscesses formed upon the dorsum. The integument exfoliated many times. The nail of the ring finger came off, but was renewed. The nails of all the digits, except the thumb, became deformed, brittle and deficient in their usual lustre. The shape of the hand was permanently changed, the rugæ of the skin, the ridges on the nails, the nuckles and palmar arch are more prominent than they were formerly. Yawning caused muscular spasm of the fingers. Inflammatory mounds with their white caps and crater-like openings came and went in the usual dilatory manner.

Five months after the onset of the attack the parts had healed, but were so sensitive to the Röntgen rays that a fifteen seconds exposure, about one yard from the tube, in a strong, high tension field, caused a secondary dermatitis.

The period of incubation, usually from one to two weeks, was reduced to as many days. The secondary dermatitis cleared up several large, ugly patches of skin diseases left from the primary attack. 'Tis thus that the X-light may, in a measure, prove to be a remedy for its own indolent process and sequelæ.

Eight months after the onset of the primary attack improvement slowly but surely continued in the newly formed skin, the atrophic changes remained the same, but the hypertrophic changes had diminished. The skin was more tolerant of all forms of actinic rays. The vaseline and starch dressing was still employed at night, but the wearing of gloves during the daytime was no longer necessary.

In the primary attack, the right hand was less severely affected than the left. Tenderness extended up both areas into the axillæ. I suffered with malaise, daily chill and fever (mild), headache, sore throat (mild), nausea and vomiting (one attack quite severe), vertigo (mild), and one attack of dyspnoea (severe but short), probably from cardiac impairment of function. There was a fine rash like that of typhoid fever scattered over the entire body.

Whether an attack of erysipelas sustained in both hands, about twelve years previous, predisposed me to X-ray inflammation, modified its course or prevented cancerous sequelæ, I am unable to determine; certain it is the two diseases (X-ray dermatitis and erysipelas) have many symptoms in common.

SOME THOUGHTS ON THE FUNCTIONS OF THE NERVOUS SYSTEM AND THE IMPORTANCE OF ORGANIC EDUCATION.*

By G. W. DRAKE, Hollins, Va.

.. "In the beginning"—whatever that means—God created a universe of matter and a universe of energy by which to govern matter. Seventy-eight different kinds of matter have so far been discovered and named, and a number of energies—motion, light, gravity, cohesion, adhesion, magnetism, chemism, electricity, etc., have been differentiated.

*Read before the Medical Society of Virginia during its thirty-fourth annual session, held at Roanoke, Va., September 15-17, 1903.

Matter is pushed and pulled, or fixed and held in place by these energies; but the greatest of all the energies is *nerve energy*—or as I prefer to call it—*neuricity*.

Neuricity is the motive power that runs all the machinery of the living body.

It moves the muscles, causes the heart to beat, controls the action of the lungs, carries on the processes of secretion and excretion in the liver, and kidneys, and other organs. It also produces the molecular vibrations in the cells constituting the functional centres of the five senses—hearing, tasting, touching, seeing, smelling—and those of temperature and pain. More than this, it vibrates the molecules in the groups of cells constituting the area of the higher mental faculties.

Currents of neuricity are flowing continuously through every tissue and organ in the living body. When they cease to flow the body dies. Suspend the current of neuricity to the heart and it ceases to beat. Stop the flow of neuric currents through the intellectual centres of the brain, and conscious thinking stops, because the motive power is "shunted" off from the thought machine. So with the other functional centres of the brain—their functions cease with the stoppage of neuric currents.

"*Things are not what they seem.*" We seem to see a man, but we only see a peculiar commotion in the gray matter of a certain area of the brain, which experience has taught us to call the sight of a man—a molecular vibration in the visual centre corresponding to a molecular vibration in the retina.

Light never touches the brain. The brain is shut up in a dark chamber (*camera obscura*), and is covered over with two close textures (the *dura mater* and the *pia mater*).

We see in the dark.

The seeing apparatus consists of external eyes set outside of the head in sockets of the skull (cranium), and internal eyes set in the gray matter in the back of the brain (the occipital lobe). When this gray matter or group of cells (the cortical visual centre) is stimulated we have the sensation of sight, and it is stimulated by neuric energy—not by light.

The light from the various points of an object passes through the pupil of the eye, and is focussed by the crystalline lens upon the retina in the back of the ball, where an inverted image of the object is made. The light goes no farther, but stimulates the liberation or discharge

of neuric energy in the cells of the retina, which is conducted by the fibres of the optic nerve back through the interior of the brain to the visual centres in the occipital lobe.

If the retina, or any part of the tract to the visual centre, or the visual centre itself is disordered, there results imperfect vision. Defective vision also often comes from abnormalities existing in the external eyes—the effect of accidental, congenital and other causes, such as diseases of various kinds, neglect of hygiene, and the unavoidable changes of old age.

If the endings of the auditory nerve within the labyrinth of the ear or any part of the tract to the auditory centre or the auditory centre itself is disordered, there results imperfect hearing. Defective hearing also often comes from abnormalities existing in the middle and external ears from various causes, avoidable and unavoidable, curable and incurable.

So with the other organs of sense, external and cerebral, with their connecting nerve fibres. If the nerve terminals in a voluntary muscle or any part of the nerve between the muscle and the motor centre in the central lobe of the brain or the motor cortical centre is disordered, there results imperfect motion of the muscle. Imperfect motion may also result from a disorder of the *muscle* itself.

A tired feeling is usually attributed to fatigue of the muscles, but it is often the expression of *brain* tire, and is relieved by taking pleasant muscular exercise that diverts the thoughts and rests the hyperæmic brain by increasing the blood current to the muscles. The most active organ gets the most blood, other things being equal.

If the ganglia (little knots of nerve cells) within the heart or the nerve fibres extending from them to the cardio-inhibitory and cardio-augmentor centres in the brain or the brain centres themselves are disordered by disease or otherwise, there results imperfect action of the heart. Imperfect action of the heart may result also from abnormalities in its walls or valves, caused by disease or old age.

If the vaso-motor nerves, extending from the blood vessels to the vaso-motor centres in the brain, or these brain centres themselves are disordered, there results imperfect action of the blood vessels. Imperfect action of the blood vessels may also result from abnormalities in the structure of the blood vessels themselves, caused by disease or senility.

Atheroma and the deposit of lime salts in the walls of the arteries, particularly these arteries which supply nutrition to the heart structure, are frequent causes of heart failure of old people.

This body of ours is fearfully and wonderfully made, and we need to study its mechanism and its functions.

Living machines versus dead machines—neuric energy versus mechanical energy. It is desirable to learn the names and uses of all the mechanical powers, and the forms of all the mechanical contrivances,—those of the machinist, the carpenter, the miner, the mason, the plumber and other artificers, viz.: levers, pulleys, screws, etc. It is vastly more desirable and eminently more useful to acquire a practical knowledge of the protoplasmic machines in our own bodies, their forms and functions, and learn how to keep them in good working order.

Physics is a great science, psychology is a great science, but the greatest of all sciences is a combination of these two with physiology, forming the compound science—physico—psycho—physiology. So important is a knowledge of physiology that a course of physics is not complete without physiological psychology. A knowledge of the functions of the brain is essential to a correct understanding of psychology.

Nearly all the maladies of life are errors of physiology, as the consequence of either inexcusable ignorance or wanton neglect on the part of the immediate sufferers or their erring progenitors. Or for more knowledge of physiology by the mother and fathers, and sons and daughters in this busy, progressive age! Sound bodies are needed to develop sound brains.

Not alone because the brain contains the intellectual and other psychic centres is it the most important organ in the human economy, but also because it contains the dominating storage batteries of neuric energy essential to the normal condition and functional activity of every tissue and organ. Centripetal and centrifugal energies control the movements of the planets; gravitation pulls the apple from the tree and hurls it to the ground; electricity runs the telegraph and telephone, and neuricity governs the man machine.

The failure to properly differentiate brain and mind has assigned to the domain of metaphysics and psychology work which belonged to the departments of physics and physiology. The functions of the brain are often confounded

with the faculties of the mind, and, as a consequence, cerebral are misnamed mental diseases.

Nervousness is a disorder of the brain, not of the mind. It is a symptom of cerebral neurasthenia, and not weak-mindedness.

Kleptomania is a deformity of the brain for which the unfortunate victim is no more to blame than the deaf mute for his organic defects. The same is true of other monomanias, when congenital.

The condition of certain areas in the gray matter of the brain has much to do with the moral sense. The manifestation of morality, or moral conduct, is influenced by the condition of specific brain cells.

Sin is both a physical and a spiritual infirmity. The spiritual infirmity is completely cured by regeneration; the physical infirmity is never completely cured during the natural life of the body. Sinless perfection of the body is an unattainable in this life as is physiological perfection. So-called mental aberration, moral obliquity, and bad temper are outward signs of inward abnormalities, with a material basis of brain deformity.

Morbid conditions of the brain are sometimes relieved by surgical operations and the character of the individual improved.

The surgeon sometimes plays the *role* of reformer and makes a marvellous change in the disposition and behavior of the degenerate and depraved. Let me illustrate by two of the many instances reported: "To one of the hospitals of Indianapolis a young boy of nine years has recently been taken for the purpose of having a most remarkable operation performed, an operation to cure him of sinning. For two or three years the boy has been a perfect menace to the police department of the city. His strong criminal tendencies were rapidly developing, and at the rate he was going it remained only a matter of time until he would land either in the penitentiary or swing on the gallows. An examination of his cranium developed the fact that a bit of bone the size of a quarter and another the size of a dime were pressing upon his brain, which pressure developed the criminal mania. The boy stood the operation well; and although several weeks have passed, none of his past tendencies have returned; on the contrary, he is bright, alert, good-natured and the personification of politeness." (Clipping from a daily paper.)

The other illustration is a still more inter-

esting case: Dr. Sidey, of Edinburgh, tells the following incident with regard to an old bachelor. He was a crabbed old fellow, lived by himself, and was averse to the society of ladies. On one occasion, while standing too near a machine, he was struck on the head by a revolving crank, and his skull fractured. He was put in a hospital, and an operation performed removing a portion of bone, and a quantity of brain about the size of a Bantam egg. The result was a complete change in the character of the old bachelor. He became very fond of ladies, married, and was ever afterwards a good and useful citizen.

Excuse my suggesting that there may be other bachelors who might be similarly benefitted by such surgery.

As the movement of the hands of the clock is an index of the condition of the internal machinery, so the conduct of the man is an index of the condition of the internal brain. Bad conduct means a bad brain. The behavior of every individual must be compared with that of the highest type of man, and his brain can be graded thereby with accurate precision. Faces may deceive, pomp of riches or foible of fashion may conceal, but truth will out and show by *character* the inward quality of the brain. The brainiest men are those whose habits of life are physically, intellectually and morally nearest perfection.

The times demand a healthy womanhood and a strenuous manhood. The demand can only be met by a systematic observance of the rules of living learned from the study of physiology.

Do not deceive yourself with the thought that physiology is a medical science. It is no more a medical science than Latin, chemistry or physics. The Greek etymology of its name—*phusis*—*logos*, nature science—makes it distinctively and pre-eminently *the natural science*.

No college or university should confer the degree of Ph.D., LL.D., or D. D., on any one who is not proficient in physiology. If this had been the practice in the past, the names of the D. D.'s and LL. D.'s would not figure so conspicuously to-day on the certificates of quack doctors and secret nostrums.

A knowledge of physiology, histology and chemistry is essential to a liberal education—a fact too patent to need argument.

It is my earnest hope that all the schools of our land shall place physiology in the list of compulsory studies and require a two-year's

course for its completion. Then may we expect in the third generation a healthy womanhood, a robust motherhood and a strenuous manhood.

Invalidism is often hereditary and requires more than one generation for the eradication of its causes. The trouble with the present generation is that too many of the prominent educators and legislators are so blinded by their own invalidism that they are incapacitated to appreciate and provide for the needs of future generations.

It is not far from the truth to say that chronic sickness unbalances the equilibrium of the brain functions, and to a degree verges on insanity. The temperament of a chronic invalid is not uniform, and the judgment often wobbles. Take care of the health of the body and the mind will take care of itself. *Mens sana in corpore sano.*

In taking care of the body do not forget that the brain is the most important of all the organs and tissues, because it contains the organ of the mind, the functional centre of the five senses, the centres for the movements of every muscle in the body—voluntary and involuntary—centres for the control of the organs of secretion and excretion. These centres are localized in different parts of the brain, but are all connected by associating fibres.

All the bodily functions are under the control of the brain. The *intellectual* centres occupy only a *small* part of the brain, and are short lived if the other parts are not healthy.

Heredity and environment make the brain. While the individual is not responsible for his heredity, he can have much to do with his environment. If his heredity is defective, he can, in a measure, obviate and correct its tendencies by a properly selected environment. Environment includes among its most important factors hygienic habits of diet, systematic exercises of all the organs of the body, and a well-regulated system of brain culture for the development of all the functional centres of the brain, none receiving undue attention, but each getting its specific food, proper exercise and periodical rest.

The adjustment of environment to the physiological needs of the body requires a knowledge of physiology. Alas! how ignorant the parents of our land of physiology, and how defective the knowledge of their children of the rules of hygiene! The restless rush to health resorts, the increasing demand for infirmities, trained nurses and medical specialists betoken an alarming state of ignorance of the rules of the *health-*

ful training of children, added to a depraved heredity.

The remedy is State control of marriage and compulsory study of physiology in all the schools, public and private. Human stirpiculture and subsequent physiological training must solve the problem of a higher womanhood and manhood. The rules of stirpiculture need to be fixed by civil law, and the physiological training needs to be regulated by expert educators who understand and appreciate the interdependence of all the bodily functions, and their complex but necessary relations to the brain.

The system of training should consist of a variety of exercises suited to the development and maintenance of a physiological equilibrium between all the nerve centres of the body, cerebral, spinal and ganglionic.

Too many of our college graduates have their intellectual cerebral centres developed out of proportion to the others, and also *specific* areas of *these* centres unduly developed to the neglect of the rest. Such men have lopsided brains, and deserve to be called cranks or mono-maniacs. Cranks and mono-maniacs, whether college-made or home-made, do not live long. Byron, Shelley and Keats had lopsided brains, and (as Dr. Kent said) the sum of their years of life barely made four-score.

A well-rounded, equilibrated development makes one healthy, happy and handsome.

Cultivate *all* the functional areas of the brain—the intellectual area by a proper variety of studies, the motor area by a proper variety of muscular exercises, the visual area by a proper variety of exercises in hearing, and the factory and gustatory areas by a proper variety of exercises in smelling and tasting. So must the tactile area be developed by a proper variety of exercises in touching.

Brain culture as a physical science has not heretofore received the attention which its importance demands, but the increasing interest in physiology, as a natural hygienic science, makes the outlook for the future more promising for a school curriculum based on physiological principles that will tend to develop a sound brain in a sound body.

In conclusion, let me repeat with emphasis the importance of educating every organ in the body—intellectual, sensory, motor, respiratory, circulatory, digestive, secretory, excretory, active and connective tissues, by proper nutrition, proper exercise and proper rest.

Oh, for a proper knowledge of how to educate

on the part of the parents and teachers of our land! Then would invalidism and insanity cease to be so prevalent, and the alarming increase in the demand for asylums and sanitariums would be obviated. Position gives power, but does not give knowledge. The trouble with our country to-day is, there are too many ignorant people in high places.

AN ACCIDENTAL CURE OF A CASE OF PAPILLOMA OF THE BLADDER.*

By ORVILLE HORWITZ, B. S., M. D., Philadelphia, Pa.,

Clinical Professor of Genito-Urinary Diseases, Jefferson Medical College; Surgeon to the Jefferson Medical College Hospital, Philadelphia Hospital, and State Hospital for the Insane.

The case here detailed is not recounted with any intention of suggesting a new method of operating for the removal of papilloma of the bladder; but a cure accidentally achieved appears to us to be, not only of unusual interest, but as adding a contribution entirely novel to the literature of the subject.

The patient was first seen by us in consultation with Dr. Louis Breechman in September, 1897. He was then 63 years of age; by occupation a boarding house keeper. He stated that he had suffered for two years before coming under our care, with what Fenwick denominates as "symptomless hematuria"—that is, he had occasionally noticed that he passed bloody urine, unaccompanied by any other symptom. The blood at first voided was small in quantity. As time went on the attacks of hematuria became very frequent, and the amount of blood lost was greater. Occasionally a good sized clot would be passed. During the past three months there has been an increased frequency of micturition—the urine being voided about every three hours during the day and twice at night. This condition has never been attended with pain. The patient stated that at the outset of his complaint the blood was passed infrequently, that the urine was blood-stained and had continued so for many weeks. He observed that the voidance of bloody urine was apt to follow over-exertion, constipation or coition.

Examination of the urine showed it to be *cloudy, alkaline, with a deposit of pus and phosphates*, together with mucous threads accompanied by clots of blood. Albumen was present in large quantities, together with crystals of hematin. No casts were found.

The cystoscopic examination detected a large

pedunculated papilloma in the vicinity of the left ureteral orifice. An operation was advised, which was positively declined. The hematuria abated under hygienic, local, and constitutional treatment. The cystitis decreased and the individual enjoyed a period of three or four months of comparative comfort. Occasionally there would be a slight trace of blood in the urine, but the amount was so much lessened as to cause but little apprehension on the part of the individual whose general health was excellent.

Whilst absent from the city during the summer my assistant was called to visit the patient, who was suffering with an attack of retention of urine caused by a blood clot; the attack having followed a long walk in the country. We had an opportunity of witnessing three similar attacks within the next year, each having followed over-exertion. The first two were relieved with much difficulty; on the third occasion retention of urine had existed for fourteen hours when first seen by us. Every effort had been made to evacuate the contents of the bladder without success. The patient was in great pain, walking up and down the room, with the body bent well forward, so as to relieve the pressure on the bladder as much as possible. A well-marked pyriform tumor existed above the pubic bone, extending nearly as far up as the umbilicus. A catheter could be readily inserted by way of the urethra into the bladder, but owing to the presence of the blood clot no urine could be evacuated. The over-curved catheter of Brodie, the blood catheter of Gross, and the evacuating tube of the Bigelow apparatus were each employed without relief. The patient positively declined to permit the use of either aspiration or supra-pubic cystotomy. As a last resort a small sized Thomson's lithotrite was introduced and an effort made to crush and churn up the clots in the bladder; emptying the contents from time to time by means of the evacuating catheter of the Bigelow apparatus, washing out the viscus with a 5 per cent. hot suprarenal solution. After a manipulation for the space of an hour and a half, the bladder was finally emptied, irrigated with a hot suprarenal solution, and continuous drainage was instituted by means of a soft catheter. Large doses of ergot were administered. There was no future trouble from retention of urine, which continued to be streaked with blood for about a week.

Two days after the relief by this manipula-

tion be began to void what he described as "large pieces of stringy flesh" which followed each act of micturition. An examination of the material showed it to be portions of the villous growth which evidently had been crushed or torn off whilst attempting to break up the blood clot. The debris continued to pass for about one week after the attack of retention and was accompanied by acute cystitis; from this the patient gradually recovered, the inflammatory symptoms subsiding, the urine becoming clear, and all signs of vesical irritability disappearing.

Up to the present time the patient has enjoyed excellent health. There has been no return of either hemorrhage or vesical irritability.

Unfortunately, after convalescence, a cystoscopic examination was not permitted, so that it can only be surmised that in attempting to break up the clot, by means of the stone crusher, the tumor was either torn from its attachment to the bladder wall, or so injured that decay of the foreign mass took place, when it sloughed and was discharged with the urine.

1721 Walnut Street.

RECOVERY AFTER NUMEROUS FRACTURES, LACERATIONS, ETC.

By L. E. FULLER, M. D., Sandy River, Va.

H. S. White, aged 10 years; son of a miller, in attempting to put a belt on a pulley while the band wheel was running at full speed, was caught by the hand and drawn in between the belt and pulley. The clothing became entangled in some way with the shaft so that he remained whirling around on the pulley under the belt until the machinery could be stopped. This shaft was making from 150 to 200 revolutions a minute, and it was estimated that the boy was carried around from 350 to 400 times before the machinery could be stopped.

This accident happened about 4 o'clock in the afternoon of February 11, 1903. I was sent for at once (six miles away) and reached the patient an hour and a half later. I found him in a state of profound shock, lying perfectly still and calling feebly and indistinctly for water; the thirst seemed intense; he would drink and then beg for water again within half a minute. The skin was cold and clammy, and the patient was pulseless at the wrist and in the temples.

I gave a hypodermic of a thirtieth grain strychnia at once, repeating the same drug

in doses of 1-60 grain at hourly intervals for three hours; meantime one hypodermic of atropia 1-150 grain was used, (exact time not recorded). When patient had recovered sufficiently from shock, thorough examination of surgical injuries was made and the following details were found: A lacerated wound in right cheek extending from corner of mouth to the ear, through the entire thickness of the cheek, the soft tissues of the chin being separated from the bone; a laceration of scalp above right ear three or three and a half inches long; another on back of left hand three inches long. These three wounds were made by a nail projecting from a piece of timber near the pulley. The feet as well as almost all other parts were very badly bruised—the shoes being very nearly whipped to pieces; a compound fracture of the right humerus about junction of upper and middle thirds—the end of the lower fragment showing plainly through a laceration two inches long; simple fracture of radius right side, simple fracture of both radius and ulna in left arm, simple fracture of right femur about junction of middle and upper thirds, compound fracture of right fibula, the wound consisting of a V-shaped flap two and a half inches long with the free point downwards; simple fracture of the left femur in the lower third.

Treatment.—All the lacerated wounds were cleansed as thoroughly as possible, and with the exception of those that communicated with fractures, were closed with silk sutures, and dressed with boracic acid. The fractures were reduced, board splints padded with cotton were applied. In adjusting the bandages the wounds complicating fractures were left accessible for convenience in dressing. In view of the extensive injuries and numerous fractures, it was necessary to keep the patient as nearly in one position as possible. To accomplish this, a special cot was constructed. A strong frame was made 2½ by 6 feet and a heavy duck fabric was stretched in two layers, one each way, and tacked on. An opening was made for the use of bedpan, placed on a false bottom or platform, which could be raised or lowered under the cot.

The patient was placed in position on the cot and the legs were steadied and fixed by use of four long bran bags. Pain was controlled by opiates, usually in the form of paregoric, or when this was inadequate a hypodermic of morphia. Strychnia was continued in tonic doses administered by the mouth.

The bowels were regulated by mercury and saline laxatives. Hypophosphites (comp.) were used after ten days to promote repair of bone structure. The diet was chiefly milk—other things being added after two weeks.

Results.—Wounds all healed without suppuration except the one communicating with the mouth. Fractures repaired without deformity, the legs remained of equal length, so that if any shortening occurred as a result of the femoral fractures it was about equal on the two sides. The patient made a steady, gradual recovery and was discharged March 31st able to walk on crutches, which were soon discarded.

This case is reported with some reluctance since it is so remarkable in some of its features as to stagger the credulity of the reader. Its publication has been finally made in response to urgent solicitation by a consultant who knows of the case, and who regards it as worthy to rank along with the most wonderful instances of vitality and recuperative power in the annals of surgery. The classical and well attested case of the laborer who had a tamping rod blown through his head by a premature explosion and yet lived to work at his trade for 12 years afterwards was not more remarkable. Aside from the exceptional recovery, it is also hoped that some practical points in the treatment may be suggestive and helpful in a small way.

Proceedings of Societies, Etc.

Medical Examining Board of Virginia.

The regular fall meeting of the Medical Examining Board of Virginia met for the transaction of business in Dr. R. W. Martin's office, Lynchburg, Va., December 15th, 8:30 P. M.

The Board was called to order by the President, Dr. R. W. Martin, and on roll call by the Secretary, Dr. R. S. Martin, the following other members were noted present: Drs. W. B. Robinson, Tappahannock; R. M. Slaughter, Theological Seminary; E. T. Brady, Abingdon; O. C. Wright, Jarratts; S. Lile, Lynchburg; J. E. Warinner, Brook Hill; H. M. Nash, Norfolk; E. C. Williams, Hot Springs.

Dr. Brady introduced the following resolution, which was adopted:

"Resolved, That the Virginia Medical Examining Board will reciprocate with Boards of

other States, but deems it necessary for its own protection that every applicant claiming such recognition shall in person present with his petition a diploma from a reputable college, together with an attested certificate from a State Medical Examining Board having equal requirements with our Board and willing and authorized to give similar recognitions to those who hold our certificates. Applicants complying with above conditions and paying usual fee shall be granted certificates."

The Legislative Committee was instructed to inquire into the matter of reciprocity with other States and report at next meeting of the Board.

The following was the order of examinations:

Wednesday—Chemistry, Obstetrics and Gynecology, Histology, Pathology and Bacteriology.

Thursday—Materia Medica and Therapeutics, Hygiene and Medical Jurisprudence, Surgery.

Friday—Physiology, Practice, Anatomy.

Questions on Chemistry, Surgery, Histology, Pathology and Bacteriology, Physiology, and Practice, also Dr. William's Homeopathic questions were read and adopted. Board adjourned.

The Board was called to order by the President, Dr. R. W. Martin, at 8:30 P. M., at his home, 510 Federal street, Lynchburg, December 17th. Present: Drs. Slaughter, Lile, Warinner, W. B. Robinson, Williams and Brady. The latter acted as Secretary pro tem.

Several petitions for permits were presented and after free discussion the following resolution was adopted as offered by Dr. Brady:

"Resolved, That it is the consensus of opinion of the Board that no permits for temporary practice shall be issued in the future."

Upon request for a decision on this question the President ruled, "Those applicants not making the full average of 75 per cent. cannot be given permits."

The place of meeting being next taken up for consideration, it was decided that the next meeting of the Board shall be at Richmond, June 21, 22, 23, 24, 1904.

The following resolution was adopted:

"Resolved, That the Legislative Committee be requested to inquire into the feasibility of having the next Legislature increase the examination fee to \$25.00 for each applicant, and if the prospects seem at all favorable, they are au-

thorized hereby to take such steps as they deem advisable to secure that result."

A request from the *Virginia Semi-Monthly* for an increased allowance for the Boards advertisement was discussed, and it was decided that the present allowance was ample, and even more than the Board could afford.

The questions on Anatomy, Materia Medica and Therapeutics, Obstetrics and Gynecology, Hygiene and Medical Jurisprudence were read and adopted.

The President requested that all examiners report their grades promptly, and it was without formal action agreed upon that no one should be informed of his grade on any one branch until his total average had been finally announced.

The President appointed Drs. Priddy and Brady a committee to examine three men in Bristol, Tenn.-Va., under special conditions similar to the examinations given other men from that place several years ago.

On motion the meeting adjourned.

R. W. MARTIN, *President*.

R. S. MARTIN, *Secretary*

Written Examination Questions

OF THE

Virginia State Board of Medical Examiners.*

Held at Lynchburg, Va., December 15-18, 1903.

SECTION ON HISTOLOGY, PATHOLOGY AND BACTERIOLOGY.

R. M. Slaughter, M. D., Theological Seminary, Va., Examiner.

(Answer six blocks.)

- I.—(a) Name and classify (histologically) the tissues found in the trachea.
- (b) Name the pathogenic cocci and give the morphological characteristic and disease association of each variety.
- II.—(a) Define and give causes of thrombus, embolus and infected embolus. State the differences between diphtheria and pseudo-diphtheria and describe how you would distinguish between them.

*In answers by the applicant to any of the questions of any of the sections, it is distinctly understood that each applicant pledges his or her honor that he or she has neither given nor received information improperly during the examinations. Furthermore, each applicant, when he finishes the papers of any section, must sign them by his registered number and not his name.

III.—(a) Describe albuminoid degeneration and give its causes.

(b) Define chemotaxis and give its varieties.

IV.—Name the connective tissue tumors and give the physiological prototype and nature (benign or malignant) of each.

V.—Give the pathogenesis and pathology of acute catarrhal (lobular) pneumonia.

VI.—Describe the physical, chemical and microscopic characteristics of the urine in acute parenchymatous nephritis.

VII.—(a) Describe the method of making wet and dry blood smear examinations, and state what may be learned from them.

(b) What is clinical characteristic of the malarial paroxysm? What is the difference in the paroxysms in tertian and quartan infections?

SECTION ON CHEMISTRY.

Dr. O. C. Wright, Jarratts, Va., Examiner.
(Answer any six blocks).

I.—(a) Define distillation, sublimation, gravitation, weight and specific weight.

(b) Name the substances adopted for determining the sp. gr. of solids, liquids and gases.

(c) How many degrees F. are equal to 50 degrees C.

II.—(a) Define valence.

(b) What physical actions have a tendency to decompose compound substances?

(c) Explain the terms reaction and reagent.

III.—(a) What is a good drinking water?

(b) What substances are most objectionable in drinking water?

(c) How would you test water for chlorides?

IV.—(a) Define osmosis.

(b) What substances dialize and which do not?

(c) Give difference in chemical symbol and chemical formula.

V.—(a) Give formula for calcium hydroxide.

(b) How is oxide of calcium obtained?

(c) What is plaster of Paris?

VI.—(a) What is organic chemistry?

(b) What elements enter into organic compounds?

(c) Give the general properties of organic compounds.

VII.—(a) What colors are produced by mixing morphine and nitric acid?

(b) Differentiate by chemical means morphine and atropine.

(c) Give a chemical antidote for morphine.

- VIII.—(a) Mention of urine its specific gravity, color, taste and reaction.
 (b) Give tests for albumen and pus in urine.
 (c) What conditions of the urine would lead you to suspect diabetes mellitus.

SECTION ON MATERIA MEDICA.

Dr. W. B. Robinson, Tappahannock, Va., Examiner.

- I.—(a) Give the physiological action of Potassium Iodide.
 (b) Define Diuretics, Diaphoretics, and mention two drugs of each class.
 (c) What indications show that the physiologic effects of Belladonna has been obtained?
 II.—(a) Compare the physiological action of Digitalis and Aconite.
 (b) What is the dose of Fowler's Solution, and what precaution should be observed in its administration?
 (c) What effect has Benzoin on the urine? Name the preparations of Benzoin.
 III.—(a) Name five preparations of Mercury, giving dose of each.

- (b) Mention the physiological antagonist of Strychnine, Morphine, Aconite, Atropia.
 (c) Outline the physiological action of Opium in medium, full and toxic doses.
 IV.—(a) Give the physiological action of Hyoscyamus.

- (b) Mention three (3) systemic emetics, three (3) antipyretics, three (3) alteratives.
 (c) Give the antidotes and antagonists to Phosphorus.

SECTION ON THERAPEUTICS.

Dr. J. E. Warinner, Brook Hill, Va., Examiner.

- I.—(a) Give a good rule for the computation of doses for children.
 (b) What drugs require a variation from the usual rule?
 (c) What drugs belong to the two divisions of Anthelmintics?
 (d) Give name and dose of most efficient treatment for severe diphtheria in child of three years.

(Block No. II. omitted.)

- III.—(a) Classify the important preparations of mercury as regards therapeutic uses.
 (b) Give the source and principal uses of Salicylic Acid.
 (c) Mention the uses of Salol and state why dangerous in large doses.

- (d) Write a compound prescription for insomnia.

- IV.—(a) What is the active principle of vegetable astringents?

- (b) To what class of agents do the lead salts belong?

- (c) For what is viburnum prunifolium used?

- (d) Give dose and uses of methylene blue.

- V.—(a) What class of foods does Pepsin digest?

- (b) To what class of purgatives does aloes belong, and in what part of intestinal canal is its chief action?

- (c) Write a prescription for habitual constipation containing three efficient drugs.

- (d) Give chemical antidotes for following: Carbolic Acid, Opium, Corrosive Sublimate, Iodine, Arsenic, Nitrate of Silver.

SECTION ON OBSTETRICS.

Dr. H. M. Nash, Norfolk, Va., Examiner.

- I.—Causes of Cyanosis Neonatorum and the most rational treatment of the condition?

- II.—Name the evidences of pregnancy brought out by auscultation, and how may the most important be utilized on the diagnosis of presentation and position?

- III.—Why is a fully flexed head so necessary to a successful issue of labor, and how should flexion be promoted?

- IV.—What are the Paternal, Maternal and Fœtal causes of abortion?

- V.—Describe the management of labor in face presentations.

SECTION ON GYNECOLOGY.

Dr. W. L. Robinson, Danville, Va., Examiner.

- I.—Give the differential diagnosis of pelvic abscess from other abnormal conditions within the pelvis.

- II.—What are the causes of Pruritus Vulvæ, and its treatment?

- III.—What are the indications, contra-indications and dangers of the Vaginal Douche? Describe the proper method of administration.

- IV.—Describe an operation for relaxed vaginal outlet.

- V.—What are the chief causes of cystitis in women and treatment for the same?

SECTION ON SURGERY.

Drs. Sam'l Lile, Lynchburg, Va., and M. R. Allen, Norfolk, Va., Examiners.

- I.—(a) What is active and what passive Hyperemia? Give causes.

- (b) What are the five cardinal symptoms of Inflammation?
- (c) What are Varicose Veins and what is a Varicose Ulcer? Give causes and treatment of both.
- II.—(a) Admitting 3 degrees of Burns, give prognosis and treatment of each.
- (b) Differentiate Hydrocele, Varicocele, Hæmatocele and Sarcocoele, giving treatment of each.
- (c) Define Synovitis, give causes, symptoms and treatment.
- III.—(a) Mention varieties of wounds; give general surgical treatment for all.
- (b) Describe operation for Resection of Ankle Joint, and give after treatment.
- IV.—(a) What is Normal Salt Solution, when indicated and how used?
- (b) Describe minutely the method of giving Normal Salt Solution intravenously. State proper temperature and what quantity to use.
- V.—(a) Mention common varieties of Calculus and give prominent symptoms of Stone of Urinary Bladder.
- (b) When is Lithotomy to be preferred to Litholopaxy and describe the operation in general outline.
- VI.—(a) What is simple Muscular Atrophy and what Muscular Atrophy with degeneration; give causes of both.

SECTION ON PRACTICE OF MEDICINE.

Dr. E. T. Brady, Abingdon, Va., (Regular),
and Dr. E. C. Williams, Hot Springs, Va.,
(Homeopath), Examiners.

- I.—Give symptoms and non-operative management of Acute Appendicitis.
- II.—Give differential symptoms of Scarlatina and Rubeola. Name most frequent and most dreaded complications, with preventive measures.
- III.—Differentiate between Acute Pleuritis, Pneumonia, and Intercostal Neuralgia.
- IV.—Give the clinical history of and urinary findings in Chronic Parenchymatous Nephritis.
- V.—Define Eczema, and give appropriate treatment, including dietary and hygiene.
- VI.—(a) Locate the normal apex beat of the heart.
- (b) Give diagnostic significance of displacement to left—right—upward and downward.

SECTION ON PHYSIOLOGY.

Dr. Robert C. Randolph, Boyce, Va., Examiner.

- I.—(a) What are the varieties of epithelium?
- (b) What is ciliated epithelium?
- (c) Name chief uses of epithelium.
- II.—(a) What are the proximate principles of the body?
- (b) Name some of the inorganic principles of the human body?
- (c) How are organic proximate principles classified?
- III.—(a) What is blood?
- (b) What are the physical characteristics of the blood?
- (c) Describe the formation of a blood clot.
- IV.—(a) What is meant by the term vesicular murmur in the lungs?
- (b) What is reserve air?
- (c) How is the blood changed by respiration?
- V.—(a) Describe the blood circulation in the kidneys.
- (b) How do the kidneys secrete urine?
- (c) What conditions increase the urinary secretion?
- VI.—(a) What is the function of the third cranial nerve?
- (b) What muscles are supplied by the motor root of the fifth cranial nerve?
- (c) What effect upon respiration follows section of the vagi?

SECTION ON HYGIENE AND MEDICAL JURISPRUDENCE.

Dr. A. S. Priddy, Bristol, Va., Examiner.
Questions on Hygiene.

- I.—Name some of the benefits to be derived from physical training. What precautions should be taken as a preliminary to physical training?
- II.—Make some suggestions which may be beneficial as to the care of school children between seven and ten years of age.
- III.—Describe in detail the most approved Hygienic treatment of Pulmonary Tuberculosis.
- IV.—Describe the physiological effects of alcohol on the system. What are some of its ill effects?
- V.—Name the qualities desirable in water for drinking and domestic purposes.
Questions on Medical Jurisprudence.
- I.—What is a poison? Give symptoms of poisoning by Arsenic; by Strychnia; by Chloral Hydrate.
- II.—Give a good definition of insanity from a

INSTITUTIONS REPRESENTED BY THE APPLICANTS
BEFORE THE
MEDICAL EXAMINING BOARD OF VIRGINIA,
FROM THE ORGANIZATION OF THE BOARD,
JANUARY 1, 1885, TO DECEMBER 15-18, 1903.

	Total Number from each Institution.	Total Number Licensed First Examination.	Total Number Rejected First Examination.	Licensed on Second Examination.	Rejected Second Examination.	Licensed Third Examination.	Rejected Third Examination.	Licensed Fourth Examination.	Rejected Fourth Examination.	Licensed Fifth Examination.	Rejected Fifth Examination.	Incomplete or Withdraw.	Partial examination.
Total number before Board from organization to Dec. 15-18, 1903 ..	2308	1421	509	154	71	29	25	2	21	1	..	37	269
Medical College of Virginia	8	1	..	5	1	..	..	..	..	..	..	..	..
University College of Medicine, Richmond, Va.	3	1	1	1	..	..	..	..	..	..	..	..	..
University of Virginia	7	5	..	2	..	..	..	..	..	..	..	..	..
University of the South	4	1	1	..	2	..	..	..	..	..	..	..	..
Western Pennsylvania Medical College	1	1	..	..	..	..	..	..	..	..	..	..	..
University of Pennsylvania	2	2	..	..	..	..	..	..	..	..	..	..	..
Baltimore Medical College	1	..	..	..	..	1	..	..	..	..	..	..	..
College of Physicians and Surgeons, Baltimore ..	1	..	1	..	..	..	..	..	..	..	..	..	..
College of Physicians and Surgeons, Atlanta, Ga.	1	1	..	..	..	..	..	..	..	..	..	..	..
Leonard Medical College	6	2	2	..	2	..	..	..	..	..	..	..	..
Wurzburg University, Germany (Wurzburg)	1	..	1	..	..	..	..	..	..	..	..	..	..
College of Physicians and Surgeons, Boston	1	..	1	..	..	..	..	..	..	..	..	..	..
Columbian University	1	1	..	..	..	..	..	..	..	..	..	..	..
Baltimore University	2	1	1	..	..	..	..	..	..	..	..	..	..
University of Maryland	3	2	..	1	..	..	..	..	..	..	..	..	..
University of New York	1	1	..	..	..	..	..	..	..	..	..	..	..
Maryland Medical College	2	..	..	1	1	..	..	..	..	..	..	..	..
Woman's Medical College of Pennsylvania	1	1	..	..	..	..	..	..	..	..	..	..	..
Vanderbilt's University, Nashville	1	..	1	..	..	..	..	..	..	..	..	..	..
Gross Medical College, Denver	1	..	..	..	..	..	..	..	..	..	..	..	..
Louisville Medical College	1	1	..	..	..	..	..	..	..	..	..	..	..
Medical Department, University of Tennessee	1	1	..	..	..	..	..	..	..	..	..	..	..
Kentucky School of Medicine	1	1	..	..	..	..	..	..	..	..	..	..	..
Non-Graduates taking partial examination	12	..	..	..	..	..	..	..	..	..	..	..	12
Totals	2371	1445	518	164	78	30	25	2	21	1	..	37	281

INSTITUTIONS REPRESENTED BY APPLICANTS
WHO CAME BEFORE THE
MEDICAL EXAMINING BOARD OF VIRGINIA,
FALL SESSION, AT LYNCHBURG, VA.,
December 15-18, 1903.

	Total Number of Applicants from each College.	Total Number of Applicants Licensed from each College.	Total Number of Applicants Rejected from each College.	Partial Examination.
University of the South	4	1	3	..
Western Pennsylvania Medical College	1	1	..	..
University of Pennsylvania	2	2	..	..
University College of Medicine, Richmond, Va.	3	2	1	..
University of Virginia	7	7	..	..
Baltimore Medical College	1	1	..	..
College of Physicians and Surgeons, Baltimore	1	..	1	..
College of Physicians and Surgeons, Atlanta	1	1	..	..
Leonard Medical College	6	2	4	..
Medical College of Virginia	8	6	2	..
Wurzburg University, Germany (Wurzburg)	1	..	1	..
College of Physicians and Surgeons, Boston	1	..	1	..
Columbian University, D. C.	1	1	..	..
University of Baltimore	2	1	1	..
University of Maryland	3	3	..	..
University of New York	1	1	..	..
Maryland Medical College	2	1	1	..
Woman's Medical College, Pennsylvania	1	1	..	..
Vanderbilt's University, Nashville	1	..	1	..
Gross Medical College, Denver	1	1	..	..
Louisville Medical College	1	1	..	..
Medical Department, University Tennessee	1	1	..	..
Kentucky School of Medicine	1	1	..	..
Non-graduates taking partial examination	12	..	..	12
Total	63	35	16	12

Editorial.

South Carolina State Medical Examining Board.

Heretofore the examination of applicants for practice of medicine in South Carolina has been very defective as compared with the requirements of other States. For some years, Dr. Al-lard Memminger, of Charleston, aided by a

number of the other leading members of the profession of that State, has been devoting himself to have the laws amended, and finally has secured the introduction of a bill before the South Carolina Legislature, which promises to become a law, and which exempts no one proposing hereafter to begin practice in that State from examination. It provides fully and fairly for students who graduate at a four-year graded medical college, and who attain 75 per cent. on all of the junior branches. On these percent-

ages they are freed from standing before the State Board after their graduation in the senior courses of such colleges. The junior portion of the curriculum includes general anatomy, physics, chemistry—organic and inorganic—physiology, materia medica and medical botany, bacteriology, histology and pathology. Applicants thus, after receiving their diplomas, are to be only examined by the State Board on the practical branches of their curriculum, on which they have, of course, devoted all their study during the latter portion of their college terms.

Wanted—A Travelling Salesman

To handle a line of pharmaceuticals and physicians' supplies in Central and Eastern Virginia by Messrs. Masengill Bros., Manufacturing Pharmacists, Bristol, Va.-Tenn.

Examinations for Army Medical Service.

The examination of applicants for appointment as Assistant Surgeon in the United States Army will be resumed in Washington immediately after the close of the present session of the Army Medical School; it will embrace the full examination (as heretofore), at the conclusion of which those found qualified will be commissioned. Full information as to the requisite qualifications for appearance for examination, method of application, nature and scope of examination, etc., may be obtained upon application to the Surgeon General, U. S. Army, Washington, D. C. The examining board will probably reassemble about the middle of April next, and those desiring to present themselves before the board should make application at once. Applicants are restricted in age to thirty years, and one year's hospital experience or its equivalent in private practice is required.

Diphtheria Antitoxin Combine.

During the latter part of 1903 the leading producers of diphtheria antitoxin—representing such laboratories as H. K. Mulford Co., Parke, Davis & Co., etc.—agreed upon a standardization and uniformity of product and of price of this essential curative and preventive agent, which should meet the approval of the profession. A recent correspondence between the *Journal of the American Medical Association* and Parke, Davis & Co., of Detroit, develops

these facts, which are interesting alike to the doctors and patient:

Last year different grades of antidiphtheritic serum, known as X and XX, were marketed at the following prices:

Number Units.	X Prices.	XX Prices.
1000	\$1.50	\$2.25
2000	3.00	4.00
3000	4.50	5.75
4000	Not listed.	Not listed.

Beginning January 1, 1904, only one grade of antitoxin is marketed, in four different packages or doses:

Number of Units.	List Price.
1000	\$2.00
2000	3.50
3000	5.00
4000	6.50

Trade discounts.—25 per cent. to the retail, and 33½ per cent. to the wholesale druggist. "With each package of the 'new or 1904 serum' we now supply an expensive device for administering the contents, sparing the physician the need of buying and sterilizing a serum syringe."

As to the potency of the new serum, "in the 4000 unit package we are placing serum testing on an average 600 units to the c. c.; in the 3000 unit package, serum testing on an average 500 units to the c. c.; in the 2000 unit package, serum testing on an average 400 units to the c. c.; in the 1000 unit package, serum testing on an average 300 units to the c. c. Thus, comparing prices and discounts, old and new, allowing for the additional cost of the injecting device, and remembering that the 'new serum,' in point of concentration and antitoxic potency, is much superior to the X serum of last year, and all but equal to the XX serum, you will see that our 1904 prices exhibit a *reduction, and not an advance.*"

Messrs. Parke, Davis & Co. further say in their letter that "fully 40 per cent. of all the serum we sell comes back for free exchange." The returned serum is poured into the sewer. "This is the sole reason for our marketing henceforth one grade of antitoxin in place of two, and four packages or doses in place of ten."

"How much money will the great city of Chicago have to spend for antitoxin to be donated to its poor? Less than \$5,000 a year." As for diphtheria sufferers who are not charity patients, they will henceforth have to pay less when the better standardized quality is considered.

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THE IMPORTANCE OF REFLEX SYMPTOMS IN GYNECOLOGY.*

By CHAS. G. CANNADAY, M. D., Roanoke, Va.
Surgeon, Rebekah Sanitarium.

To more than briefly consider some of the affections in gynecology in reference to reflex symptoms would occupy more time and space than can be consumed in this paper.

When the sympathetic nervous symptoms are remembered as putting in immediate telephonic communication, so to speak, the uterus, ovaries, tubes and bladder with the gastro-intestinal canal, heart, liver, lungs, kidneys and brain, it is not surprising that troubles of the uterus and appendages and bladder so often find expression of their symptoms in organs far removed, and in fact are often overlooked by the physician entirely, owing to the absence of the so-called classic symptoms, such as pain in lumbar region, dysmenorrhœa, etc. How often serious troubles occur in the pelvis and are overlooked by the attending physician, owing to the absence of the so-called classic symptoms above referred to, is known only to those whose work in this field is large and varied, and who never complete a diagnosis in females for any chronic illness until the generative organs have been carefully examined. The delicate construction of the sympathetic nervous system with its intricate communications with the thoracic, abdominal and cranial contents is one of the largest fields in gynecological diagnosis, and no one who gives it a passing consideration of secondary importance in determining female ills can ever be justified in so doing. Beginning at the ophthalmic, the sphenopalatine, the otic and submaxillary ganglia in the cranium; the superior, middle and inferior in the neck; and the twelve thoracic in the chest, and

the large semilunar ganglia adjacent to the coeliac axis in the abdomen, constituting, "the abdominal brain," so-called; the four lumbar ganglia and lastly the four or five pelvic ganglia which terminate in the ganglion impar in front of the coccyx, compose a continuous chain on either side of the body of greater importance to the gynecologist from a diagnostic point than any other of the many systems to be considered. Then it must be further remembered that these various gangliæ do not compose an independent system but receive both sensory and motor filaments from the cerebro-spinal system; also it must be considered that the mucous membranes, the non-striated muscular fibres and the muscular coats of the arteries are richly supplied with filaments of the sympathetic nervous system.

Mental aberration caused by sexual disturbance in females has been ably described by Dr. Fordyce Barker, of New York, and Dr. H. R. Storer, of Boston, early in the seventies of last century, while Dr. Geo. J. Engleman, of St. Louis, in 1877, contributed some valuable facts touching on hystero-neuroses in females. The contention of the latter eminent authority that certain reflex symptoms were due to diseases of the sexual organs in the female has been confirmed by the disappearance of these symptoms on the removal of the diseased or offending organs. While in gynecology this view has been, I am free to admit, often abused by removing perfectly healthy organs without good results in relieving these reflex symptoms, still this can in no way detract from the importance of carefully investigating these organs in all chronic cases in females—however slight in reality may be the classic symptoms of pelvic disease.

It has been my custom to examine carefully these organs in every chronic case in a female, during the last fifteen years and have often found lurking there unsuspected cause for reflex symptoms which have been relieved by re-

*Read before the Roanoke Academy of Medicine January 4, 1904.

moving the offending trouble. The following are a few cases occurring in my surgical work during the last twelve years that show urgent need of following out this custom in detail:

Case I.—Mrs. N., of Texas, married, age 35, a mother of one child 11 years old, suffered from an aggravated form of dyspepsia, and had visited all the important watering places in this country and had consulted numerous eminent physicians with only temporary relief. There was no dysmenorrhœa, no backache, no metorrhagia—in fact, nothing to make one suspicious of pelvic disease connected with the generative organs; she had never been examined for such trouble as none of the many physicians had requested it. I found on examination a tumor about the size of a large orange in the left broad ligament and advised its removal when she returned home as she was only visiting in this city. After returning home she decided to come back to Roanoke and have me operate which I did, and removed an intra-ligamentary cyst of the left side. She made an uninterrupted recovery and the dyspeptic symptoms entirely subsided and she regained her normal health and strength. This has been six years ago. I heard from her a few weeks since and she still remains perfectly well.

Case II.—Mrs. M., married; age 34, mother of six children, last three years of age, had suffered from hysterical attacks and violent headache but no backache since birth of her last child, no painful menstruation; catamenial periods regular, flow not excessive; had taken internal medication continuously since birth of last child, but had never been examined for uterine trouble in connection with her present illness and protested against an examination, claiming nothing of this kind existed. Her prejudice in reference to this was overcome, and an examination revealed sub-involution of the uterus, hypertrophy of cervix, both ovaries enlarged but not very tender, uterus movable. She consented to an operation. The cervix was amputated, uterus curetted and replaced and subsequently kept in place by tampons followed by a Hodge pessary until the ligaments had regained their normal strength. The result was magical—the violent headache disappearing along with hysteria. This patient has never had a return of her trouble, notwithstanding no medication has been prescribed.

Case III.—Miss B., age 20, single, suffered from violent attacks of cephalalgia, frontal and

occipital, which had been present and almost continuous for six years; catamenia regular, no pronounced pain at menstrual periods, flow not excessive, no leucorrhœa. Some time elapsed before she would consent to examination, stating she had been examined a year previous, and had been assured that there was no uterine or pelvic trouble. An examination was attempted digitally, but owing to the pain it caused and to the nervous condition of the patient it was deferred. The patient subsequently was anesthetized. A tumor was found occupying the space to the left of the uterus and was the size of a cocoanut. I subsequently performed a coeliotomy and removed a large dermoid cyst filled with hair and sebaceous matter from the left side. Both ovaries were found cystic and were removed. The uterus was suspended to the abdominal wall and the patient made an uneventful recovery, regaining flesh and strength rapidly, the violent and continuous headache having subsided and only the "hot flushes" remaining to remind her of the loss of her ovaries. Only about eight months have elapsed since this operation, but I am thoroughly convinced her relief will be permanent.

Case IV.—Mrs. W., age 30, mother of three children, last three years of age, complained of severe coronal headache, attended with nausea and tachycardia which had persisted for three years; no backache, no menorrhagia, non-painful menstruation, no leucorrhœa, but suffered from obstinate constipation. An examination revealed retroflexion of uterus, the fundus lying between utero-sacral ligaments, and enlargement of the corporeal portion, patulous os, and she was suffering from glandular endometritis. Operation was performed under an anæsthetic. The uterus was thoroughly curetted, its interior swabbed out with sterilized glycerine and carbolic acid, replaced in its normal position and retained there by a suitable Hodge pessary. The headache entirely disappeared along with the nausea and rapid action of heart. This was three years ago and the patient has continued well ever since.

Case V.—Mrs. M., married, age 29, mother of four children, last two years of age, complained of hacking cough and attacks of dyspnoea which had been present for a year and a half. No history of tuberculosis in family, chest expansion normal, no rales, nor submucous rales, no dullness over either lung, vocal resonance normal; first and second heart sounds

clear and distinct, no murmurs, no hypertrophy, no dilatation of heart, blood vessels normal; no backache, nor abnormal symptoms in reference to catamenial periods; there was slight leucorrhœal discharge following menstruation. This lady had been dosed with cod liver oil and creasote and had taken all kinds of tonics, but had neither been examined nor treated for uterine trouble. Examination revealed a large and patulous os, uterus retroverted, ovaries prolapsed and uterus and ovaries bound down by bands of plastic lymph which had undergone organization into fibrous tissue, forming firm bands which had anchored the uterus, tubes and ovaries to adjacent organs. This condition of affairs was evidently due to pelvic inflammation occurring after the last confinement, as she gave a history of having been very ill and debilitated for several months after the last delivery. I put her to bed, massaged uterus and adnexa, used wool tampons saturated with glycerine and ichthyol for some time until the uterus was freely movable and tenderness had entirely subsided, after which a Hodge pessary was applied and worn for several months with occasional removals. I used no internal medication, and after two months treatment was gratified to find my patient gradually lose her cough and dyspnœa until it had entirely disappeared, and she has since enjoyed good health.

Case VI.—Miss C., unmarried, age 22, for the last six years has had attacks of hystero-epilepsy occurring monthly and lasting four days which would leave her prostrated and for three days unconscious. Her skin was rough and scaly, her mental condition was at a low ebb. She had no backache, no dysmenorrhœa and no leucorrhœa, no increase nor excessive flow at her catamenial periods. She had been given bromides until she had developed gastric catarrh. It was not until after much persuading that she would consent to a digital examination of the uterus. Both ovaries were found enlarged and soft and fixed to the broad ligaments. I persuaded her to submit to operation. Both ovaries were removed and the uterus suspended to the abdominal wall. She recovered from the operation and returned home in four weeks. She subsequently passed through an attack of typhoid fever. The operation was performed ten months ago and there has been no return of the attacks of hystero-epilepsy, and the skin has regained its normal condition, the

gastric catarrh has subsided, and I am sure she will continue well.

I could cite more cases to emphasize the importance of carefully examining the uterus and adnexa in all chronic cases of obscure diseases in females, but time will not permit. I have briefly handled this subject because I wish not to expound obscure problems in pathology nor come before you in a didactic fashion, but as a fellow worker in a field and on a subject with which we all must be familiar, and in which we must labor carefully if we would exclaim, Eureka!

ECTOPIC GESTATION.*

By M. SMITH, M. D., Sulphur Springs, Texas.

In selecting *ectopic gestation*—or a more appropriate term, “tubal pregnancy”—for my subject I owe an apology, for my limited experience will not allow me much data to draw from, having only had two cases in my twenty-two years experience in the practice of medicine. The first case was one of the intra-peritoneal variety and was in a dying condition when I was called. The second was of the extra-peritoneal variety, the hemorrhage being confined to the broad ligament and was of the mildest form.

The term ectopic gestation applies to all cases of pregnancy that take place outside of the uterus. This being the case, we are led to ask where a normal pregnancy occurs—concerning which there are many views. Some contend that it takes place in the uterus, Tait for instance. Others say that it takes place in the tube. Most authorities, however, disclaim the Tait theory and conclude that pregnancy does occur in the tube. The ovum and spermatozoa meet perhaps in the uterus, the upper portion of which is lined with ciliary epithelium; the amœbic movement of spermatozoa is wafted along by the conjoined force of the ciliary epithelium and the amœbic movement of the spermatozoa into the tube, where it remains about eight days when it is forced back into the uterus by the peristaltic action of the tube.

There are three places for tubal pregnancy to occur. First, in the isthmus—the intersti-

*Read before the North Texas Medical Association, December, 1903.

tial variety which is rare. Second, in the ampulla, or that portion of the tube between the isthmus and fimbriæ—the so called dilated portion where the greatest number of tubal pregnancies take place. Third, the fimbriæ ovaria, or fimbriated extremity where it will be conceded almost impossible for pregnancy to take place, while in animals the spermatazoa have been found floating around ovarian tissue. With these facts before us we may be surprised that extra-uterine pregnancy does not occur more frequently; still it is exceedingly rare, Montgomery giving only three authentic cases out of a large number. Kelly designates it as being one of the greatest gynecological rareties.

Ectopic gestation may be caused by any factor which arrests the fecundated ova in its passage to the uterus. The ovum may fall into a diverticulum in the tube. It may be stopped at a point of stricture which has been produced by an adhesion, flexure or stenosis of the tube. Sometimes a tube remains convoluted as in infancy, and the plicæ so numerous as to favor interference with the retrogressive movement of ovum. Emotional condition at the time of conception is mentioned by Montgomery as a possible cause. By far the greater number of tubal pregnancies are due to adhesions which bind the tube in such a way as to prevent its normal peristaltic action. Prior says, that simple catarrhal salpingitis causes a condition of the tubal mucosa propitious to the occurrence of ectopic gestation; but the more usual and severe form of salpingitis rather tends to prevent ectopic gestation. Most of his cases gave histories of mild sepsis after abortion or labor. It is well to remember that sepsis extends through the lymphatics and not primarily through the tubes, producing peritonitis rather than salpingitis. The lymph effusion seals the ovary to the tube and prevents tubal peristalsis; hence the much talked of ciliary epithelium is absolutely helpless to transport the fecundated ovum back to the uterus but must be done by the tubal peristalsis.

Now, the ciliæ are provided for another essential and entirely different purpose. The ovum is a most perishable structure; its delicate walls cannot withstand the pressure of the contracting mucous surfaces brought into apposition through the agency of peristaltic force. In order that this force may not prove fatal to the ovum it is necessary that some provision be

made by which it shall be protected from this peristaltic pressure in its journey to the uterine cavity. Now, the arrangement of the cilia provides a bed of velvet on the pile of which the hope of the race safely rests its passage. The pressure of the visitor through the delicate ciliary bed conveys the signal to the presiding nerve center and the rhythmical muscular contractions are at once inaugurated, and the ovum is gently rolled along into the uterine cavity. Pfaff in *Journal Amer. Med. Association* so beautifully describes this condition I quote the above from his article.

Pfaff also asks if this peristalsis be so necessary and essential for the transportation of the impregnated ovum back to the uterus, then certainly the numerous factors which occasionally operate to produce paralysis of function in similar structures may fairly be regarded as causes of tubal pregnancies.

The diagnosis of tubal pregnancy is not always so easy as we are sometimes led to believe. In the beginning, as a rule, the symptoms of normal pregnancy exist, especially if it be of the interstitial variety—morning sickness, excessive or depraved appetite with many of the other reflex symptoms too numerous to mention, lead the patient to believe that she is pregnant until seized with severe abdominal pain due to rupture and all the symptoms of severe shock, collapse and perhaps death as in my first case. Other cases may not have missed a regular menstrual flow, but at about the time the flow should appear there comes the same violent pain in the lower abdomen with symptoms as before indicated but not so violent as was the case in my second case. Another very material diagnostic symptom and perhaps the most trustworthy of them all is the microscopical examination of the flow from the uterus, where the decidual and choroidal villi may be found—it being a conceded fact, it matters not where the pregnancy takes place, that the decidual membrane is formed in the uterus and the shedding of this membrane is accountable for this flow that is so often mistaken for normal menstrual afflux. I will state in this connection that the physician rarely ever has the opportunity of making a diagnosis until after rupture has taken place. Another very important point I would like to impress most forcibly is that the vast majority of cases of hæmato-salpinx and pelvic hæmatocele are primarily tubal pregnancies. All authorities agree that women

who have been previously sterile are far more liable to this form of pregnancy. Just why, they do not say.

The treatment of ectopic gestation is still in disputed grounds; but the one infallible rule that each case is a law unto itself, is no better demonstrated than in this condition. Therefore, the conditions presented in each case must govern the surgeon as to the proper course to pursue.

I might divide the treatment of these cases into three groups: First, before rupture takes place, operate as soon as diagnosis can be made. Second, after rupture has occurred, operate immediately. The one condition that could be waited on possibly would be hemorrhage into the broad ligament or extra-peritoneal where perhaps the bleeding might be controlled by its own pressure. Third, and I suppose the only one where there is any difference of opinion as to the proper treatment, is where rupture has taken place and the fetus is viable. Even then some advise immediate operation; others advise waiting in the hope of saving the life of the child. If we could be assured that we could save the life of the child and deliver a well developed baby, which rarely happens, we might be inclined to wait; or if after rupture, and hemorrhage not too great, the child not being viable, we might wait until nature comes to the rescue of the patient and absorption of the exudate takes place, almost severing its connection with all vital parts—the child undergoing lithopedic degeneration, making the operation later on vastly more simple and safe. Should the child continue to live until its normal time for delivery the question then presents itself in a quite different light; but nearly all agree that the best thing to do is to deliver the child by abdominal section, stitch the placental membranes to the abdominal wound, letting the placenta come away by sloughing; otherwise an effort to remove the placenta would be attended by such violent hemorrhage as to so seriously endanger the life of mother that at least 90 per cent. would succumb.

The psychological depressions and neuralgias, so common in the period following a debauch, are lessened, or disappear altogether, by the use of Celerina.

THE PROPOSED CONSTITUTION OF THE MEDICAL SOCIETY OF VIRGINIA.*

By E. T. BRADY, M. D., Abingdon, Va.

In selecting the subject for this paper, I realize that it is perhaps open to the criticism of being somewhat inappropriate to discuss in one organization the constitution of another. I offer no apology, however, because the question is one upon which each of us as members of the State Society will be called to decide at the next annual meeting, and is therefore of direct concern as well as of vital interest to all.

My object primarily is to present the proposed Constitution to you for consideration, and secondarily, to request that you familiarize yourselves thoroughly with the details of the by-laws based upon it, so that whichever way your vote may be cast it will be based upon that thorough understanding which should characterize the decisions of a fraternal organization. That the need for some change was realized, is evident by the appointment, at the 1902 meeting of the State Society, of a committee to revise or report upon changes in our present methods, and this Constitution is the one recommended unanimously by them. It will be accepted or rejected at the next meeting.

[As the proposed Constitution and By-laws are printed in full in the *Transactions of the Medical Society of Virginia*, 1903—just issued—the reader is referred to that volume for full text of the same, and the discussions that took place bearing on this subject.]

The committee presented with this, a set of by-laws, which are in accord with the constitution, and fully and clearly detail the method it implies, and these by-laws are explanatory to the degree that they will make misunderstanding impossible to one who reads them. They are, of course, too long to be presented here, but should be read by each of you. I will only touch upon such as make vital changes, and originate benefits or compensate for present deficiencies. Those not mentioned are routine affairs and of no special interest.

The most manifest deficiencies in our present methods were:

1st. Lack of uniformity with organizations of other States, and with the American Medical Association.

2d. Lack of proper representative action.

*Read before the Southwest Virginia Medical Society at Wytheville, Va., January 12, 1904.

3d. Impossibility to give proper consideration to material or business matters without interfering with the scientific programme.

4th. Small proportionate membership compared with the numbers of our profession in the State; and

5th. Practical exclusion from any voice in the national organization.

The proposed Constitution remedies all these. It is the one prepared by a committee of the American Medical Association, adopted by that body and recommended by them as a basis for State Constitutions.

Its adoption, therefore, would at once put us in line with the American Medical Association, and would thereby enable us to act in unison with it, as well as with those States which have, or shall, adopt it. Thus we would immediately work in harmony with them, whereas, at present, hardly any two constitutions are at all similar, excepting of course the ones above referred to. The by-laws require on this line, that the Secretaries of County Societies report to the Secretary of the State Society, and he to the national organization, the name, address and professional data of every physician in his county, regular or irregular. It will readily be seen the value of having such an accurate register, making it easy to inform one's self of proper men, even interchanging credentials when changing location, and equally easy to trace irregulars or quacks.

Lack of Representative Action.—We at present have no delegated authority—members present vote their sentiments, as individuals merely, upon whatever questions of polity arise. Not being forewarned, their opinions must be given on the "spur of the moment," and therefore are hap-hazard and uninformed as well as being solely individual. Now, in the new instrument, it is provided that all business and material questions shall be decided upon by both informed and delegated authority. Each county must organize a County Society, and each Society shall elect a delegate for each 25 members, or fraction thereof, thus insuring the smallest county a representative. These delegates constitute the House of Delegates of the State Society and transact all business of the Society. Holding its sessions separately from the scientific body they can freely and thoroughly enter into the discussion of detail. Further, notice is required to be given to *each member* at least sixty days before each annual meeting of all

proposed changes in the by-laws, and all important matters which will probably be considered by the House of Delegates. Thus the local physician having a business as well as a scientific programme can discuss with his local fraters all matters of interest and when they elect their local delegate they can instruct him as to their desire, and even if not present at his selection, can communicate their views to him either in person or by mail. The delegate thus becomes not only an authorized mouth-piece, but an informed one, and votes the desires, as he reflects the sentiments of his county profession. The local men, therefore, have as full representation as if all were present in person. This not only accomplishes advised, reliable and authoritative consideration of all subjects, but absolutely prevents what is now so apparent, the thorough domination which of necessity follows the place of meeting. With our present large membership and steady growth, it has already become apparent that only large cities can accommodate our annual gatherings, which means that under present methods a few of the larger ones will wholly dominate the actions of the Society. There is quite a considerable danger here—granting that it has not been done, the possibility is apparent, and certainly here as elsewhere, prevention is to be preferred to cure. No rational man can seriously believe that 100 delegates, each from a separate county, could be as likely to form cliques, or follow local prejudices, as might be done at present. I dwell upon this because of its vital importance. The profession who are distant from the place of meeting should and must have representation, and not only that, but proportionate representation.

Impossibility to give proper consideration to material or business matters without interfering with scientific programme. The separation of the business and scientific bodies would, of course, simplify action in both. The presence of the delegates would give added attendance, and still others would attend who now absent themselves because they have learned from experience that their time and expenditures were wasted because of the interference of petty routine business matters with the real attraction, the scientific programme.

It has another phase well worth considering. Are not distinguished visitors kept away because they know not when their valuable and interesting articles would be sandwiched be-

tween a committee report and a long-winded and sometimes not very temperate discussion of some business detail?

These arguments have, I am aware, been met by the specious statement that few of our meetings have failed to complete the programme. And in a ludicrously ineffective way it is partly true. But at what sacrifice? The interesting and instructive part of a scientific meeting, as we all know, is not in the papers presented; these are always, when worthy, published in the journals, where they are accessible to all. The real interest is aroused, the solid instruction gained in the spicy, sparkling, original discussions, which should follow the papers, as the sermon follows the text. Yet who among us has not been deterred from expressing himself in discussion by the constant pushing and hurrying in order to jam through the programme. It is farcical, unscientific and certainly disappointing, and I believe this one change alone will go as far as anything else to stimulate attendance and revive interest.

Membership.—In addition to the increased membership for reasons indicated, there would be *at once added* every present non-member, who would connect himself with the local society, this carrying with it as it does membership in the State body. And just here let us consider the very important change, one of incalculable advantage, and a most marked and much to be desired advance—namely, that the door to the State Society would be the local organization. No one in the future could join the central society until elected by those with whom he is associated. And who can better weigh him? This is the just, proper and only right way to choose our members. It is utterly impossible for our committee on nominations, honest, sincere, just and over-worked as they are, to properly sift and investigate the hundred or more applications rushed in upon them for a few hours each session. The new by-laws require that one must have the endorsement of two-thirds of his local organization in order to be elected a member, but, if elected he thereby becomes a member of the State Society. This feature has been looked upon with dread by some, but it is, in my opinion, a needed and most admirable provision. And I do not hesitate to assert that a man who would receive the adverse vote of one-third of the profession of his county organization, is not a fit man for association with our State body.

Finally, with regard to our *representatives in national councils*. At present those of you who have heard the reports of our previously appointed representatives, must have been struck with their emphatic remarks upon their impotence. It would have been ridiculous, if it were not so humiliating. But what could they have expected. Not being organized in accordance with the national body, they simply were entitled to the privileges of being present in the meetings of the scientific body, a courtesy only, and without voice. But how different should the new Constitution be adopted. Instead of two or three appointed delegates, appointed by courtesy and usually on request, and because they expected to go, we would in the future have from three to five legally authorized representatives in the House of Delegates as well as on the floor fully entitled, and with authoritatively delegated rights to all the privileges of the rest, demanding as a right what they have hertofore attempted to receive by favor.

Some critics have condemned the change in elections, which, under the proposed Constitution, is done by the delegates, instead of by a general meeting as at present. This is, of course, not a vital matter, and can be changed without impairing the regularity of the organization. The method was fully endorsed by the committee because we believed the House of Delegates would be more representative of State sentiment, and less likely to be swayed by local favoritism than would be possible at any general meeting. This recommendation was made, I must say in justice to the committee, solely because they believed it good policy, and without any thought of affecting the present capable and efficient officers, particularly those who have devoted so much of their time, energy and interest to the Society's welfare. They should, and doubtless will, be continued in their places of usefulness so long as they are willing to serve.

The collection of funds is another slight stumbling block to some. Under the new method, the secretary of the county society will collect in his county and forward to treasurer of the State Society. This will relieve the State Treasurer of a great burden—the collection will be much more readily made by the local man, and there will be fewer delinquents. I can see no reason for objection. The task is already onerous for one man to keep 1,000 separate accounts—what will it be under the probable in-

crease of 1,000 more? Certainly it will be simpler for the treasurer to keep 100 accounts, and will impose no burden upon any one man. The fee is unchanged.

I have endeavored to cover the most important changes proposed with my views as to the hoped for, and I believe probable, results. I will not burden you with the necessary minutiae, though hoping you will thoroughly and carefully consider them in every detail. I only reiterate in closing that it is a duty you owe yourselves, your profession and your society to be prepared to vote intelligently when the question is finally considered.

The only objections I have yet heard advanced have been based upon a misunderstanding or misrepresentations, and wholly dissipated upon careful study of the Constitution. Of course, I refer to vital questions. Naturally, even reasonably, there have been objections to some minute details in the By-Laws. These little differences would arise in any organization plan. But do not let us reject a good thing, because of some petty detail. Let us rather eliminate the objectional triviality and retain what is both good and vital. The added benefits of interchanging credentials, of reaching all the profession, half of whom are not now connected with any organization, the strength of united effort, the pride of fellowship or "*esprit de corps*," the interchange of social pleasures—the rubbing together of local men—the widened field for gathering new ideas, and the increased audience for one's own views—I have not touched upon, they are self-evident and indisputable, requiring neither explanation nor defence.

In conclusion, I most earnestly urge the adoption of the new Constitution, believing, as I have endeavored to show, that it would advance immeasurably the individual, the Society, and the State.

DISCUSSION OF PAPER ON NEW CONSTITUTION.

In the very free discussion which followed these questions were asked:

Can the local county societies be maintained? To what extent would our State Society be under the control of the American Medical Association? How would the adoption of the new Constitution affect the present members should they not enter a local organization? Would the new plan enforce payment of additional dues to local societies? Should a local society discipline a member, or reject an applicant?

Would he be thereby disqualified for membership in the State and national organizations? What is the minimum number constituting a county society, yet entitling it to a delegate? Why were these accusations of "snap judgment" made at the Roanoke meeting by those opposed to the change? Why was Dr. Styll displaced as Treasurer?

To these questions Dr. Brady replied, as follows:

As to maintaining county societies, I can see no difficulty. For purposes of the organization only one meeting annually is required. This should be held just before the meeting of the State Society, when, the business and scientific programmes having been received by each member, they can discuss such matters and elect and instruct their delegate. Of course, if it were expected to have monthly meetings, or social dinings or banquets, it would be thoroughly impracticable, but one meeting annually should, I think, be easily obtained.

Present membership—There could, of course, be no change in present membership. Each member at time of adopting the new Constitution and By-Laws would retain his present standing, whether they joined local societies or not. They could only participate in business meetings, however, being elected as delegates, which would require connection with their local societies. I see no reason why one should not wish to join a local society.

As to dues—It is not to be supposed that dues will be required by local societies except that now paid to State Society; this may be collected by the local treasurer, and, if so collected, must be forwarded by him to the treasurer of the State Society.

As to discipline, etc.—Suspension or expulsion from a local society carries with it, under the By-Laws, the right of appeal to House of Delegates of the State Society. In case of affirmation there, appeal can be taken to the national organization. The same holds good as to a rejected applicant. This seems a stumbling block to some, but I am sure through misunderstanding the By-Laws, which require a vote of one-third of the local membership to reject an applicant. One can conceive of personal animosity causing one man to oppose another, but it would be putting a very low estimate on common decency to fear that one-third of the members of any local society would reject an applicant. Should it do so, it would seem to me that

a person who could arouse such widespread dislike had best be omitted.

As to the minimum number—There is none. The Constitution provides that each county shall be entitled to a delegate. Then, if but one man organize himself, he is entitled to act as delegate. In the olden days when physicians were few, and distances between them great, they were hard to congregate, but now few county seats but are readily accessible to many physicians, and there will be ready response to the call for organization. As all present members will be entitled to aid in organization, it is firmly believed that all reputable men will at once connect themselves with the local societies, and as such connection carries with it membership in the State Society, it is believed that within a year after the adoption of the Constitution the membership of the State Society will be increased by from 500 to 750 members.

The "snap judgment" cry was a puerile basis for delaying action. It was based upon the statement that the By-Laws had been changed since presenting them to the Society previously. This charge was true. Two changes were made. One was the insertion of the one word "*white*" before the word "physician," in the clause prescribing the requisites for eligibility. The other was the elimination *in toto* of the clause requiring adherence to the Code of Ethics of the American Medical Association.

These were the sole changes, and made by the committee the first day of the Roanoke meeting. The white Virginian who would object to either of those changes has not yet been born, and I hope never will be.

As to subordination to the national organization—There can be none. Simply adopting a set of By-Laws framed by their committee was recommended solely because it was the best and only form on which all States can unite, as 20 have already done. Each State maintains its absolute independent autonomy. Indeed, instead of working downward from the American Medical Association through the State, to the county societies, the procedure is absolutely reversed, and the local county society can actually dictate to the American Medical Association so far as membership is concerned. Our only connection with the American Medical Association will be in matters of national professional interest, when through our regularly elected delegates we will have our properly apportioned and fixed representation in their House of Delegates, thus having voice in all national affairs,

and adding the weight of our influence to all efforts at national legislation or education.

The most effective understanding of the matter can be brought about by comparing with our political system, which is its analogue. Our district and State representation in the National Congress in no wise interferes with our State autonomy, yet we have our delegated and proportionate voice in national concerns. Just as we would feel the injustice of not being permitted representation in Congress, we feel that we are derelict in not having our delegates in the national professional organization. And this is due to the fact that we cannot claim that right without sending properly delegated representatives. Any Constitution based upon chosen delegates, chosen by delegates, would entitle our representatives to recognition. The societies' committee simply recommended the plan proposed, because it gave that system of delegated authority, and to it added uniformity with most other States. Could there be a shadow of excuse for fear of "subordination," the presence on the committee of the State Society, which recommended that Constitution, of such men as Hugh T. Nelson, W. L. Robinson, and I hope I may not be misunderstood in including myself, should disperse such suspicions.

As to Dr. Styll's defeat—This was a very regrettable surprise, having no meaning whatever in so far as the Constitution was concerned. Dr. Styll was a personal friend, and an efficient treasurer. His defeat was wholly due to his very intemperate language, in presenting what no one can doubt was his sincere views. This Dr. Styll made ample amends for, and I am sure he regretted the affair as much as he said he did, and I feel equally sure that had he either not used the expressions he did, or had he made his amends before the election, he would be our present treasurer.

I have endeavored to reply to the questions put, both sincerely and concisely. If I have misstated anything, I assure you it was not intentional, and I again advise you to weigh the matter well, and make free and full inquiries from both friends and opponents of the plan. Above all, don't put it off till the Society meets and then cry, "snap judgment."

Aunt Abby: I hear that Cinthy Simpkins is sick.

Aunt Kate: Yes, I s'pose she is by this time. Them patent medicine men was 'round yesterday with advertisements.

INTESTINAL CANCER.*

By J. GARLAND SHERRILL, M. D. Louisville, Ky.

Professor of Surgery and Clinical Surgery, University of Louisville, etc.

Cancer of the intestine while rare is more frequent than we are led to believe; sarcoma is much less frequent than carcinoma and selects especially the small intestine, while carcinoma most often attacks the large bowel. The appendix is the seat of both carcinoma and sarcoma, although occurring quite infrequently. The literature shows that men suffer from both forms oftener than women. Adeno-carcinoma was the type most often seen, while the round celled sarcoma or the lympho-sarcoma occurred oftenest.

The adeno-carcinomata rarely cause circular occlusion of the bowel, but this is the usual termination of scirrhus. Any form of malignant disease, by infiltrating and matting the intestines together, may interfere with the fecal flow. Inflammation not infrequently attacks the tissues around a malignant growth. This was a prominent feature of the author's first case, and from cases reported simulating appendicitis it may be inferred that it has occurred in them as well. Tuberculosis is noted as a complication of cancer in a few cases, while intussusception is an accompaniment in about 10 per cent. of the cases. While leaning to the parasitic idea as the best explanation offered as to their causation, it is by no means proven.

The usual point of origin of these growths cannot be established from the present literature upon the subject. A frequent site is the follicles of Lieberkuhn. Undoubtedly the primary carcinomatous growths must spring from the mucous membrane of its glands, and this view is borne out by the reported cases of carcinoma of the appendix, where the disease has been detected at its inception.

The following statements are made in connection with Dr. H. D. Rolleston's case in support of this view: "The facts that the growth was most extensive in the mucous coat, that it could be traced into the muscular coats and that there was no growth in the peritoneum, showed that the growth originated in the mucous membrane of the appendix and that it was not a secondary growth either implanted in the peritoneum or arising as a result from embolism within its substance."

Whipham's case also had its origin in the mucous coat. Jopson and White say that the point of origin in sarcomatous tumors is rather difficult to locate on account of the size of the tumor and the involvement of the bowel, when the subject presents itself to the operator or to the pathologist; but from the data of the microscopical examination of the tumors which they have been able to collect, and from the careful examination of their own cases, it seems to them that the mucosa is the starting point of these tumors: and from the normal histology of the intestine, it may be the origin, if we take it for granted that they have their origin in the lymph follicles.

The symptoms of either form of cancer affecting the intestine are very obscure, especially in the earlier stages when interference might offer some hope.

There may be present early some irregularity of the bowels, but as a rule this is not of sufficient moment to demand attention. After a time uneasiness, discomfort or actual pain in the abdomen appears; owing to the gaseous accumulation this pain is often colicky in character. It is general over the whole abdomen at first; later it may become localized over the seat of the lesion and is often increased on motion. Although present in the majority of cases, the disease may exist for a long time before any appreciable pain is noticed. As the disease progresses tenderness will accompany the pain. If invagination develops as it does in some cases, the pain will become acute and the symptoms of that condition will be added.

Loss of flesh and strength is marked and progressive, greatly out of proportion to the discomfort of the patient even when the appetite is good and the digestion appears to be normal. Any derangement of the digestion tends to accentuate the loss of strength; nausea and vomiting may occur especially if any tendency to constriction of the intestine is present.

Alternating constipation and diarrhœa are often observed being probably due to constriction of the gut, with impaction which after a time excites a diarrhœa. When ulceration takes place the diarrhœa may become continuous and prove very intractable, even exhausting the patient so that death results. Hemorrhage from the intestine occurs infrequently—in fact less often than we would naturally expect. It is most often seen in rectal cancers.

Many cases give a history resembling recur-

*Original abstract of a paper read before the Southern Surgical and Gynecological Association, December, 1903.

rent appendicitis especially when involving the ileo-cecal coil. Attacks of pain lasting a few days or weeks with tenderness, nausea, perhaps vomiting tumefaction in some cases, and a slight elevation of temperature, with relief by treatment followed by a recurrence after a few weeks or a month, are quite likely to be considered appendicitis.

My first case presented just such a history and other writers have mentioned this resemblance: Spellisy, who mentions cases reported by Janeway, Muhsam, Coley and McCosh; C. N. Dowd reports a case of annular carcinoma of the cecum which followed the usual course of a slowly progressive appendicitis.

Eugene Smith also reports a case that had previously been mistaken for appendicitis. In Cumston and Vander Veer's collection, eight cases simulated appendicitis, those of Caird, Mayo (2), Bernays, Lookwood, De-Launey, Pilcher and Vander Veer. Libman reports five cases of sarcoma giving such symptoms.

The most constant symptoms of the disease are tumor which appears in every case that lasts for any length of time, and cachexia which gives the skin a peculiar yellowish cast. Anæmia soon becomes marked and the patient is more and more debilitated until he dies of exhaustion unless obstruction occurs and makes a rapid end of the case. Sometimes, however, the first indication of the disease may be the development of an intestinal obstruction in a supposedly healthy man, as the usual symptoms may be absent. An interesting feature of two of the reported cases is the presence of tuberculosis with cancer.

The *duration* of the disease is very uncertain. Death has occurred in some cases in ten days after the first symptoms were noted while others have had symptoms for ten years.

The *prognosis* is very grave. Unfortunately treatment is usually applied so late that the results are not flattering. An early diagnosis and operation will give these unfortunates the best chance; therefore, we should not lose sight of the fact that such conditions present with some degree of frequency.

The *diagnosis* owing to the vague symptoms must be made largely by exclusion. Pain, tenderness, irregular diarrhoea alternating with constipation, dyspeptic symptoms, rapid loss of flesh and strength, even with good digestion, anæmia and cachexia, with an abdominal tumor will make the diagnosis.

In the absence of tumor or some of the other symptoms, an exporation is justifiable and may often be productive of great good.

The *treatment* is to be largely determined by the extent of the involvement. Resection of the intestine and extirpation of the growth offers the patient the only hope of a permanent cure, and this chance though slight should be given the patient whenever practicable, as early in the course of the disease as possible. Any of the classic methods may be employed. When this procedure is unsafe a fecal fistula may be established to relieve obstruction if present, or to remove irritation from the passage of feces over the diseased tissue. In some cases short circuiting of the diseased intestine by an anastomosis may be practiced with benefit. When the involvement is too extensive to permit operation, palliation is practically all that can be done, as visceral cancer has not responded to the Coley fluid, the X-rays, or to the injection of the canceroin of Adamkiewicz.

Case I.—This patient, a white woman of 26, giving a history of repeated attacks of what was thought to be appendicitis, came to operation February 17, 1903. At that time, she presented a painful tender mass in the right iliac region accompanied by nausea, fever, and a rapid pulse. The abdominal wall was quite rigid. Upon opening the abdomen the mass was found to consist of the cecum and ascending colon which were matted together on their outer side. The peritoneum over this mass was thickened and the tissues around showed evidence of inflammatory changes; the mesenteric glands were enlarged. Posteriorly a small abscess was found, which communicated with the lumen of the gut through a fistulous tract which had formed as a result of the ulceration of the neoplasm.

The growth extended through the wall of the cecum and colon, firmly uniting them. It appeared inside of the intestine as an irregular elevation about two inches in diameter, and quite firm in consistency. The small gut was not involved, the appendix was normal, and no other growth was discovered in the abdomen. A resection was the only thing to be done under the circumstances and this was done by end to end suture—the dilation of the ileum making this procedure comparatively easy. The patient rallied poorly and died in 18 hours later from exhaustion due to shock and sepsis.

A microscopic examination showed the

growth to be adeno-carcinoma. The mesenteric glands presented evidences of inflammation but were free from malignant involvement.

Case II.—This man, white, age 54, came to me May 15, 1903, for relief from a fecal fistula which had persisted since September last. The fistula followed an operation done at that time, according to his report, for an abdominal trouble causing pain and fever. I found him very anæmic, thin and feeble. Examination showed a fistula opening at a point half way between Poupart's ligament and the margin of the ribs, and just external to the other margin of the right rectus muscle. This fistula was surrounded by a nodular mass about the size of a small melon, which also involved the adjacent skin and muscular tissue. The mass could be isolated from the deeper tissues of the abdomen. A diagnosis of malignancy was readily made, and the patient fully informed of the gravity of the condition, and the slight probability of a permanent benefit.

On May 16, 1903, this mass which consisted of the cecum and ascending colon, a mass of omentum, a foot of ileum, and part of the abdominal wall, was removed and the ileum sutured to the transverse colon. The patient made a good recovery, but from the last report it is probable that he has had a recurrence.

The neoplasm was made up of a number of gelatinous nodules varying in size from that of a pea to that of an egg. These nodules looked like clumps of grains of cooked sago or rice but were almost colorless or a pale grayish white, were very friable, readily separated from the mass and had very little vascular connection.

One of these nodules was attached to the base of the appendix, which was distended at each end and constricted in the middle, and a number of isolated ones were removed from the peritoneum beneath the liver and the posterior surface of the stomach.

The microscopic examination showed the growth to be a cylindrical celled carcinoma undergoing a mucoid or colloid change.

St. Charles Place.

"My grandpa had a perplexity fit yesterday," said little Bessie to her playmate.

"Perplexity fit!" exclaimed the other.

"I guess you mean a parallel stroke, don't you?"—Louisville Post.

TREATMENT OF HIP-JOINT DISEASE.*

By WM. P. MATHEWS, M. D., Richmond, Va.

Prof. of Anatomy, Medical College of Va.

The successful treatment of hip-joint disease requires an accurate knowledge of the pathological conditions present in the case, varying from a slight osteitis, that tends to a perfect functional recovery, to an acute, infectious, destructive involvement of the entire joint structures and invading the surrounding tissues. It requires likewise, knowledge of the function of the joint, a ball-and-socket joint permitting motion in all directions and placed at the junction of two segments of unequal size, its muscles and supplying nerves; also considerable mechanical skill and ingenuity, and intelligent co-operation on the part of the mother or nurse in the execution of the various details of treatment.

The object of treatment is to prevent the symptoms and the natural i. e. untreated, effects of this disease, e. g., to relieve the pain, so annoying and depressing to the vitality; to overcome the muscular spasm that increases the intra-articular pressure and friction causing distortion and deformity; to prevent or correct deformity or distortion and by these efforts to prevent that irremediable condition of upward displacement of the femur.

In many advanced cases removal of all diseased parts is necessary even to amputation at the joint itself, on account of the severity of the case, and its dangerous complications. The best method of treatment of hip-joint disease is the one that most effectively assures perfect rest, fixation and protection of the diseased joint, and this under the best possible hygienic surroundings. The repair must be effected by absorption, ejection or enclosure of the diseased processes. The granulation tissue may become sufficiently organized to resist the further infection of the tubercular bacilli and become solidified into fibrous tissue.

When the disease is limited to the articular extremity of the femur and has been recognized early, then treatment is very simple indeed, as perfect rest in bed with slight traction will almost invariably give a perfect functional result in from six to twelve months. I mean of course a portable bed, such as the Bradford and Lovett gas-pipe frame bed or the Phelps plaster-bed either of which can be carried about easily and

*Read before the Richmond Academy of Medicine and Surgery, January 12, 1904.

kept in the open air or sunshine as desired. If the case is further advanced and the joint invaded then absolute rest, relief of all function, protection against jars, pressure and friction must be secured, which means that distraction of the opposed bony surfaces be secured and retained until the acute stages and symptoms shall have passed or subsided. This implies that the joint is practically a broken joint and is to be treated as a broken bone by splinting, stilting and traction. The patient should be put to bed on a narrow firm mattress, and the body secured by the Marsh method or else placed on the Lovett frame, the diseased limb elevated until the lumbar spine rests on the bed and traction applied in this line by the weight and pulley attachment. The weight should be the least that will relieve the muscular spasm and consequently the pain and pressure, varying from 5 to 20 pounds. The adhesive plaster—moleskin—should come up on the thigh nearly to the hip so as to produce distraction at the hip and not at the knee joint. The footpiece should be just a little wider than the foot so as not to allow pressure on the malleoli. As the pain and spasm subside the limb is gradually lowered until its normal position is attained, usually in from two to six weeks. Sometimes longitudinal traction is not sufficient to secure this result and lateral traction has to be added: usually 5 pounds is enough.

When the acute symptoms have subsided and the deformity corrected, some one of the devices for ambulatory treatment may be applied, either the modified long Taylor or Phelps brace, or the Thomas iron splint, or as we use, the plaster spica bandage and crutches with the high shoe, 2½ inches on the well foot.

The old traction hip splint was not intended as a fixation appliance by its inventor Davis, who said "the first splint, as well as all my modifications, admits of free motion of the diseased joint, but rigidly excludes all friction of the diseased surfaces upon one another." Actual distraction is that at which he aimed, but the splint did not secure it. We use the brace in ambulatory treatment because it is practically as good as any other method even if it does not immobilize the joint, and then only when the symptoms show that the disease is quiescent. Thomas splint aims at the perfect immobilization of the joint, and thus prevents friction and pressure of its surfaces.

Whitman says "this brace—so effective in

preventing and overcoming flexion deformity—does not prevent lateral distortion." This can be prevented, however, by an additional lateral bar. We prefer and usually use a close snug fitting, properly padded plaster spica bandage including the lower half of the thorax and extending to the end of the toes. The joint is further protected by the addition of a piece of light steel or block tin extending from the middle of the back to the lower third of the thigh, another over the front of the joint and another at the back of the knee—all incorporated in the plaster. The antero-posterior support deserves special attention. This appliance permits the patient to get about with crutches and the high shoe as well as any other appliance, and as thoroughly protects and fixes the joint as any other known method of treatment. It is inexpensive, cleanly and easily applied.

If a brace is to be applied the long hip splint with a short spica of the Lorenz pattern comes nearer to the ideal perfect combination. The time required for a complete cure of uncomplicated cases varies from two to four years, and it is better to continue for a year too long than for a week too short. The treatment is to be continued until all of the symptoms have entirely disappeared, when there is no muscular spasm, pain nor increasing limited motion and when weight bearing causes no discomfort.

Abscess is the most common complication of this disease occurring in about 50 per cent. of all the cases. This, of course, includes all of the liquid accumulations of the tuberculous processes either within the capsule or in the peri-articular structures sufficient to form an appreciable tumor. The abscess first appears in the space between the sartorius and tensor fasciæ femoris muscles, or on the inner side of the thigh, or else beneath the gluteal muscles, varying with the point at which the capsule is ruptured, the weakest point being at the bursa of the ilio-psoas muscle.

Abscess is dangerous to the life of the patient on account of profuse suppuration and its consequences that may follow infection, and to the functional activity because of adhesions and contraction. Sometimes and in perhaps the larger proportion of cases where the joint has been protected, the formation of an abscess is insidious, its appearance long delayed and therefore not recognized. Again it appears early, due to the destructive involvement of the joint, and is accompanied by an acute exacer-

bation of all the symptoms with a decided temperature. The great danger is infection, which may occur before an opening forms, but as a rule the abscess is sterile until the skin is open. Two methods are now employed by good surgeons, the one class advocating absolute non-interference with the abscess cavity; the other class advocating immediate evacuation and thorough cleaning. About 20 per cent. disappear without treatment so that it is wise to let the symptomatic abscess alone when proper after treatment cannot be secured.

Wherever asepsis can be secured free incision with complete evacuation of the contents of the abscess, careful exploration of the capsule of the joint and removal of any diseased foci that may be found in the interior of the capsule and the proper closing of the wound is the routine treatment of the majority of the orthopedic surgeons of the day. It relieves the system of the burden of absorption of a great mass of necrotic material, causes little or no disturbance and heals rapidly. If infection has occurred or the diseased foci cannot be thoroughly removed so that further fluid accumulations may be expected, drainage must be established. The iodoform emulsion formerly so much in vogue has been thoroughly tested and discarded.

Sinuses should not be interfered with as a rule, until the active stages have passed, and when it is judicious to close them at all complete dissection and thorough removal of the disease is the proper radical treatment. Sometimes the symptoms cannot be controlled as above indicated when an *exploratory incision* becomes necessary, and this is usually done by an antero-lateral incision about three inches long, along the line of junction between the tensor fasciæ femoris and the gluteus medius muscles, which allows of free inspection and manipulation of the head of the femur, after the joint has been opened in the line of the neck. This may be necessary in the later stages of the disease for long continued suppuration or to remove the necrosed bone.

Again excision of the hip may be found necessary in certain cases to save the life of the patient. Where there is progressive failure in health or where infection cannot be properly drained or where there is extension of the disease to the shaft of the femur, or some such serious complication exists, this is the treatment of necessity. Koenig's method is probably the best, a description of which will be found in the usual text books.

Amputation of the joint may be necessary even after an excision on account of continued suppuration and exhaustion or from extension of the disease to the lower part of the shaft.

Some cases of untreated and even treated cases of hip-joint disease get well with a firm ankylosis with decided flexion deformity which is best treated with linear osteotomy of the femur about two inches below the trochanters.

Bier's treatment of tuberculous joint disease is deserving of some attention as it has been recently taken up by some of our leading orthopedic workers and is giving splendid results. The action of the venous or passive congestion is, according to Bier, as follows: 1. It increases the formation of fibrous tissue and induces hypertrophy of the bones. 2. It has a bactericidal action in infectious joint disease, notably tuberculosis. 3. It exercises an absorptive effect on the effused products of the disease and on new formations that check joint motion. 4. It relieves pain and lessens the activity of progressive disease.

605 Grace Street, East.

THE EARLY AND LATE SYMPTOMS OF HIP-JOINT DISEASE.*

By E. J. MOSELEY, Jr., M. D. Richmond, Va.

Assistant to chair of Clinical Surgery, University College of Medicine, Richmond, Va.

A failure to properly and quickly diagnose hip-joint disease may entail disastrous results to the patient; hence, we cannot become too familiar with the symptoms arising from a tuberculous affection of this joint. Many cases escape the notice of good men, being diagnosed as affections of a rheumatic or neuralgic nature, or even being put off under this ruse to await developments.

Early diagnosis means simple and effective treatment and radical and permanent cure in most cases; while a *late diagnosis* signifies more serious, painful and prolonged disease, often resulting in operative measures, permanent shortening and deformity, discharging fistulæ and a train of harassing symptoms. A small amount of care exercised in recounting and looking for the symptoms may lead to happy results for both patient and physician.

*Read before the Richmond Academy of Medicine and Surgery, Jan. 12, 1904.

In this locality, hip-joint disease is very frequent, but it is even more so in countries where diet is poor, hygiene is worse, and there is greater prevalence of tubercular trouble.

A slight consideration of the anatomy and pathology of the parts may lead us to a more thorough understanding of the conditions prevailing. The hip-joint is a ball and socket joint capable of all the motions, formed by the head of the femur fitting into the acetabular cavity. The articular surfaces are covered by cartilage. The ligaments of the joint are the capsular, ileo-femoral, teres, cotyloid and transverse, and the joint contains a large synovial membrane. The bony surfaces are the large cup-shaped, circular, acetabular cavity; and the upper extremity of the femur with its semi-circular head (hemispherical), neck and two trochanters, the greater and lesser, connected by the spiral line.

It is upon the greater trochanter that blows and falls come; hence, in a great many cases, especially in children, it is in the spongy cells at this point in which the tubercular infection originates. A second class shows the origin of the infection in the synovial membrane of the joint (usually in adults). A third variety shows the infection in the acetabulum itself.

At the point of origin of the trouble there is a deposit of the bacilli; secretion is poured out in the joint which becoming infected by pus germs, develops a septic arthritis. The process gradually extends—more fluid being poured out within the capsule, destroying the function and anatomical relations of the joint. The capsule ruptures and an infection of the surrounding tissues takes place. Caseation or abscess formation results, causing total destruction of the joint. Some cases in which the infection takes place within the spongy cells of the greater trochanter are more favorable in result if attended to early, for these cells can be curetted out and the function of the joint sustained.

A mother appears with a child, relating the facts that he limps, becomes easily tired out, is irritable, restless at night, often crying out in his sleep. She attributes the trouble to a fall received some time since. It is at this juncture that a diagnosis should be made, for at this stage the patient can usually be cured and permanently.

On looking over the symptoms, we find (1) Lameness. (2) Rigidity of muscles and immobilization of joint. (3) Pain (a) on stand-

ing up, (b) worse at night, (c) on pressure over trochanter, (d) reflected pain to the knee (obturator nerve). (4) Apparent elongation due to tilting of pelvis in an attempt to relieve the diseased joint. (5) Flattening of nates and loss of gluteal fold on affected side.

Later on, the symptoms become marked: (1) Increasing deformity, adduction and slight flexion of leg. (2) Increased pain becoming continuous and worse at night. (3) Arching of spine: On placing patient flat on back on the table, pressure downward on the knee causes arching of the spine in the lumbar region, as that one or more hands may be slipped beneath it. (4) Muscular atrophy. (5) Distance between trochanters is greater, and actual lengthening takes place due to distension of the capsule of the joint. (6) Restricted motion. Finally, the outcome is either (a) shortening of the limb due to partial resorption of the deposit with ankylosis and prominence of the buttock on the affected side, or (b) symptoms of acute infection appear, heat, redness, swelling, emaciation and hectic flush. Abscesses form and may point directly outward, under Poupert's ligament, in the perineum, in the groin or lower down on the surface of the thigh. Pathological dislocation of the joint at times takes place, and if treatment is delayed, a general tuberculous infection may result.

1001 Grove Avenue.

SURGERY OF HYDROCEPHALUS. ILLUSTRATED BY 100 STEREOPTICON SLIDES. AN HISTORICAL RESUME.*

By B. MERRILL RICKETTS, M. D., Ph. B., Cincinnati, O.

The benefits of surgery in hydrocephalus have not been commensurate with other lesions involving the soft tissues within the cranium, even though operations for the removal of fluid within the ventricles and arachnoid cavities have been numerous varying in character and degree for almost two centuries.

Experimental operations have been exceedingly limited in number owing to the scarcity in the lower animals of pathologic changes

*Original abstract of a paper read before the Western Surgical and Gynecological Association, Denver, Colorado, Dec. 23 and 28, 1903.

within the cranial cavity that induce the secretion of an excessive amount of meningeal fluid.

So far as can be determined hydrocephalus has not been produced artificially. Until it can be so produced many obstacles must be surmounted before much is to be gained from experimental work upon normal animals. However, the desired knowledge may be obtained in due course of time if the greater proportion of cases of hydrocephalus in the human being could be carefully observed and operated upon, and the results of such operations analyzed and recorded by painstaking investigators. Enough has been accomplished in the human being suffering from such a condition to give unbounded faith and assurance in surgery as being the only means of relief and cure of hydrocephalus.

Puncture may be cranial, spinal or subcutaneous.

Cranial puncture is to remove fluid from the ventricles or arachnoid cavity by trocar direct to escape externally. *Spinal drainage* is done through a canula introduced into the lumbar spinal meninges for the purpose of removing fluid from the cranial cavity. It will in many cases do so but it is not certain. *Subcutaneous drainage* is accomplished by allowing the fluid to enter the subcutaneous structures and thereby become absorbed. It was first suggested and practiced by Turck, (1885-1890), but without avail.

Puncture: Dionies (*d'Operations de Chirurgie* 3rd edition, 1736) suggested draining the arachnoid cavity through the various sutures and fontanelles. This is one of the earliest recorded suggestions of this character, and it no doubt had much to do with the proposition of Rev. Stevenson, 1745, to trephine the cranium of Dean Swift. The two suggestions were epoch making, as operations for hydrocephalus date from that period.

Le Cat punctured for hydrocephalus October 23, 1744, and he was followed by Remmet of Plymouth, 1778, who used the trocar to remove eighty ounces of fluid from a case of hydrocephalus. Odier, 1785, removed fluid from such a case with much benefit.

Vose, 1818, successfully treated hydrocephalus by removing the fluid during the year 1821. Lizars, Frickelton and Delafield, each removed fluid in cases of hydrocephalus with great benefit. Conquest, 1837, recorded nine such cases in which he removed the fluid, one resulting in a cure.

Battersoy, 1850, reported three cases of congenital hydrocephalus in which he employed puncture with the evacuation of sanguinous fluid.

Blackman, 1854, reported his own case and sixty-nine cases of hydrocephalus operated upon by various surgeons in various ways with sixteen recoveries and fifty-three deaths.

In the *Glasgow Medical Journal*, 1866-'67, 1, 1862, is recorded a successful operation for hydrocephalus.

Kidd of the same year reported one cured by paracentesis.

Ricketts, B. M., 1891, trephined in acute meningitis draining the arachnoid space.

Ewart and Dickenson, 1891, reported two cases of chronic hydrocephalus from which they removed the fluid and introduced air. Moseley, 1894, aspirated the lateral ventricle for hydrocephalus.

Glynn and Thomas, 1895, recorded one case in which they trephined and opened the fourth ventricle with recovery.

Good, 1897, thus cured by operation a case of hydrocephalus with Jacksonian epilepsy.

Senn (*Subcutaneous Drainage in Surgical Treatment of Hydrocephalus, Alienist and Neurologist*, St. Louis, August, 1903), reports a case of attempted subcutaneous drainage of an internal hydrocephalus, the object being to avoid infection. The patient died rather unaccountably. No postmortem was allowed—though marked improvement seemed to follow the operation. The case indicated to him, however, that subcutaneous drainage is preferable to open drainage, and proves conclusively that the cerebrospinal fluid is quickly absorbed by the connective tissue elements as soon as it escapes from the ventricle. (A. M. A.) About one hundred and fifty papers have been contributed to this subject.

Compression by bandages of cloth, adhesive plaster and rubber bands has been practiced as a means of treatment for many years. One of the first to mention this method was Blanc, 1821, who maintained it to be most efficacious in curing certain cases of hydrocephalus. Bernard, 1825, successfully treated a case of chronic hydrocephalus by compression; since then a number of operators speak of the method in most complimentary terms.

Fifteen or more papers have been contributed to this subject.

Seton.—Continuous drainage is one of the

earlier methods resorted to for cure of hydrocephalus, many favorable results in the way of benefit and cure having been observed. Charter, 1845, used it in a case which resulted in death, while the case reported in the *Irish Hospital Gazette*, Dublin, 1873, recovered. Freid, 1900, records a case of hydrocephalus cured by seton.

There have been one hundred and thirty-four contributions to this subject.

Injection of solutions such as iodine, zinc and various other astringents has been practiced since, 1856, when Boinet injected tincture of iodine into the arachnoid cavity after the fluid had been removed. Brainard, 1859, made multiple injections of iodine into an hydrocephalic tumor. Not many successes have attended or followed such a course of treatment.

The *Medical, Electrical and Topical* treatment of hydrocephalus is negative and should not be tolerated.

CONCLUSIONS.

1. Excessive secretion of the cerebral meninges may occur in any form of animal life.
2. The various forms of vegetable life are subject to excessive local or general secretion to a fatal degree.
3. Hydrocephalus, ventricular or meningeal, may develop in utero or at any time throughout infant or adult life.
4. The number of cases of spontaneous recovery in either are probably numerous especially in infant life where the arachnoid is alone involved.
5. All cavities may unite with or without external rupture; when so it is usually fatal.
6. Spontaneous rupture may occur externally or subcutaneously with an occasional recovery.
7. The effusion may be into the lateral, third or fifth ventricle or it may be in the arachnoid cavity, one or all.
8. A clot in the arachnoid cavity may cause a cyst which will enlarge with all its consequences.
9. Syphilis and rickets have been assigned as causes of hydrocephalus, but such have never been proven; the cause is yet unknown.
10. Sometimes zones of new caseous material are seen scattered here and there in the meninges and sometimes upon or in the brain substance.
11. The septum lucidum is invariably thickened as are the cerebral meninges in general.

12. It is probably the greater number of cases of hydrocephalus whether of the third or fifth ventricle or of the arachnoid variety that can be cured by some form of drainage.

13. Continuous drainage by seton or the repeated use of the trocar has given the better results in the way of benefit or cure.

14. Spinal drainage has been practiced to but a very limited degree, and as yet with very undetermined results.

15. Subcutaneous drainage has not as yet resulted in a cure, but there seem to be many possibilities for this method.

16. Trephining for drainage is only resorted to in cases where the fontanelles have been closed by bony union.

17. Results from drainage are more favorable if it is done when the presence of fluid is first detected.

18. It is sometimes necessary to drain both hemispheres, together with the right and left cerebellar cavity.

19. The secret of curing arachnoid hydrocephalus by drainage probably lies in obliterating the arachnoid cavity. However, this can hardly be so with hydrocephalus of the third, fourth and fifth ventricular variety.

20. The cardinal principle in this as in all operations upon the brain is asepsis.

A VISIT TO PROF. KEHR'S CLINIC IN HALBERSTADT. GERMANY.

SECOND PAPER.*

By I. S. STONE, M. D., Washington, D. C.
Surgeon to Columbia Hospital, etc.

Prof. Kehr resides in his private hospital (clinic) and devotes the upper floors to his patients. Each floor communicates with the main stairway and is entirely separate from the others, very much like the American "flat." The operating room is on the top floor and is reached by elevator from the basement. The "dressing room" is on the floor below the operating room and also serves as an examination room.

When operating upon the gall ducts, stomach, etc., Prof. Kehr makes what may be called a

*The first paper appeared in issue of January 8, 1904, of this journal.

central lateral incision. Beginning at the ensiform, the incision is extended downwards and to the right over the rectus, and opening the sheath of that muscle. This gives easy access to the organs in question, and may be extended downwards to the region of the appendix if it is to be removed. The lower end of the incision usually reaches the level of the umbilicus and affords all needed room without additional lateral incisions. A cushion is placed under the patient opposite the incision which curves the body forward and greatly assists in exposing the organs for inspection and manipulation.

The old incision outside the rectus has always served a good purpose when operating for empyema or upon the gall bladder alone, but we have often experienced much difficulty in reaching the other organs and now find after a trial of the incision used by Prof. Kehr how greatly superior it is to the one formerly used. The direction of the gall ducts being downwards and inwards, they are in reality very near the median line and consequently are best seen through the incision above mentioned.

Although as stated we favor suspension of the gall bladder in appropriate instances, we will briefly mention a case we saw treated by Prof. Kehr which shows the *importance of making a thorough examination of the other organs besides those suspected*. A gentleman aged about sixty-five years had the usual symptoms of cholelithiasis with mild cholangitis, such as slight jaundice, pain, etc. When the abdomen was opened the gall bladder was found distended and contained a few stones. After the calculi were removed the attention of the operator was attracted by a hard mass in the liver adjoining the cystic duct, which he at first pronounced "carcinoma." After the bladder had been removed careful examination disclosed an abscess instead of malignant disease.

A single abscess adjoining the cystic duct and gall bladder having its origin in one of these structures or the hepatic duct must be a comparatively rare condition, and while we failed to learn just how often Prof. Kehr had seen such a complication in such a healthy subject, still we believe it exceptional.

The result in the case mentioned above was secured by a competent man working through a large opening in the abdominal wall, and might not have been attained by anyone operating through a small incision over the gall bladder. We may well consider what would

have been the condition of the patient had the abscess not been found.

The removal of the gall bladder (cholecystectomy) is comparatively easy and safe provided the surgeon can be certain that the choledochus is free from all forms of obstruction. It is desirable to remove an offending and useless organ such as the gall bladder when occasion offers. It is much like the appendix in having no special use save to give the trouble. When it is the seat of a "cystitis" the adhesions around the organ are similar to those around an inflamed appendix, and the same good reasons may be given for its removal. It is easily separated from the liver and the only difficulty is to secure the cystic artery. It is, however, well to remember that in severe icterus we must expect increased danger of hemorrhage, and in our opinion its removal under such circumstances is questionable. We have had sufficient experience with this operation to learn how much easier it is to explore the gall ducts after the bladder has been removed.

We have learned from our Dr. Davis, besides Prof. Kehr, and others, the value of gauze drainage in operations upon the gall ducts, and that their closure after cholelithotomy is dangerous. We have never used the Halstead method of closure by the "little rubber hammer," believing as we do that they are unnecessary, and considerable practice is required before they can be quickly applied. Hence we are glad to observe the practical and simple methods used by the subject of our sketch, and we believe by many other surgeons.

We did not have an opportunity to witness an operation for union of the choledochus with the bowel, (choledochenterostomy,) as we had hoped. This operation has a distinct although a limited field. Obstruction of the lower end of the choledochus by tumor or pancreatic disease may necessitate this operation. It is possibly very difficult unless the duct is already greatly distended from the obstruction—a condition which to the writer appears to be the only proof of the need for such surgery.

Besides the operations mentioned we saw Prof. Kehr perform *gastroenterostomy*. We would like to describe the symptoms and indications for this operation, but can only suggest that stenosis, or the ulceration which may result in a stricture of the pylorus appear to demand gastroenterostomy and pyloroplasty. As all of us know, the former operation has been

performed frequently for malignant stenosis of the pylorus; but now the new surgery proposes to look after the "symptoms" which may result in stenosis or perhaps worse conditions of the stomach.

If many "dyspepsias" and other vague symptoms have an organic lesion for their origin then we may at least comprehend the position of those who propose gastroenterostomy in order to afford comparative rest to the much abused pylorus which must be invaded *volens* by all sorts and conditions of food, drink and unhealthy gastric contents, until "forbearance ceases to be a virtue." But we must not discuss indications. Prof. Kehr uses the method of Von Hoecker and opens the omentum and sutures the bowel to the stomach on its posterior aspect. He does this rapidly and I believe never uses a mechanical device such as the Murphy button.

We saw a patient at the clinic who had a "vicious circle," a result of gastroenterostomy by an eminent surgeon in another city. The lady had eructations of bile and duodenal contents into the stomach which should have passed downwards into the jejunum. The patient looked perfectly well, was in fine spirits, and appeared to be satisfied that she would be relieved by operation. Prof. Kehr proposed to make an anastomosis in this case, between the afferent and efferent bowel which would permit the direct downward passage of food, etc., instead of a return to the stomach. This opening would be made about three inches below the stomach and would be completed with all silk sutures without mechanical device or even cat gut.

Prof. Kehr's greatest work is in gall stone surgery, but the number of patients we saw treated for other diseases appeared relatively large. His strong points are thorough investigation of the disease through a good long incision; then after proper operation he provides abundant free drainage. This applies to the hepatic duct especially, and naturally is equally important in acute pancreatic disease.

His daily inspection of the bile which flows from his gall stone patients shows how earnestly and closely he watches for the disappearance of "muddy bile." He knows that drainage is to be continued as long as this continues. We saw how rapidly these patients improved after operation even while pouring out nearly all of their bile into a glass container.

We saw drainage and gauze used here "ad libitum." The amount of gauze we saw packed under the liver of one of these patients makes us feel mean and stingy about our economical use of it. Many yards of gauze are used, and he relies upon its presence in most operations. The abdominal incision is partly closed by stout silk sutures but an opening is left through which the tube and gauze can be easily removed and if necessary daily inspection made of the very depths of the wound. Long retractors are used to enable one to look down into the wound, and flushing (irrigation) is practiced with a free hand until one can see the entire wound area.

We were surprised and amazed to observe the free open treatment of these patients. Convalescent patients were staying at hotels and were moving about freely with open wounds containing gauze in greater or less quantity. These patients were exercising and eating heartily, and yet were under daily inspection and their wounds dressed as required. It is unnecessary to say that most surgeons would keep such patients in bed, or at least in the hospital until the wound had healed. But we must testify to their cheerful appearance and manner, and that they were doing quite as well or perhaps better than to have been detained in the clinic.

Our letter must now come to an end. We have failed to do full justice to Prof. Kehr for our stay was too short to observe much of the man or his work. But we highly appreciate his efforts to show us something of his methods, and have found his teaching of great service already.

In our former letter we did not extol the attractions of Halberstadt itself; perhaps we did the town an injustice for we failed to mention the occasional opera and the proximity to the Harty mountains, far famed for beauty and romantic scenery.

1618 Rhode Island Avenue.

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NEURITIS.*

By E. M. MAGRUDER, M. D.,
Charlottesville, Va.

The term *neuritis* signifies inflammation of a nerve or nerve trunk.

In this paper we deal only with nerves of the cerebro-spinal system, composed of medullated nerve fibres.

HISTOLOGY.

A nerve or nerve trunk is a cord made up of many elements. From within outward we have:

(1) The *nerve fibre*, which is made up of a central *axis-cylinder* composed of primitive *fibrils* and surrounded by a delicate sheath called *axilemma*. Outside of this is the *myelin* (medullary sheath or white substance of Schwann) with its *cylinder cones and incisures*; and still external is the *neurilemma* (primitive sheath or sheath of Schwann). At intervals along the course of the fibre are constrictions, the *nodes of Ranvier*, containing no myelin. The part between any two of these nodes is called an *internodular* or *interannular* segment, and in its centre underneath the neurilemma is a *nucleus* surrounded by protoplasm. This nerve fibre branches only towards its termination. Between the nerve fibres lie delicate fibrils of connective tissue, constituting the *endoneurium*, which contains the capillaries distributed to the nerve fibres.

(2) *Next, a number of these fibres* are collected into *funiculi* or bundles bound together by lamellated connective tissue, covered on both surfaces by endothelium, constituting the *perineurium*, which contains lymph spaces, blood vessels, and lymphatics.

(3) *Next, a number of these bundles* are held together by a common connective tissue sheath, the *epineurium*, containing blood-vessels and lymphatics and send in *septa* or other fibres to blend with the perineurium.

Thus is formed a nerve or nerve trunk.

PATHOLOGY.

In neuritis the inflammation generally begins in and is confined to the fibrous connective tissue of the nerve trunk, and is called *perineuritis* when it is limited to the outer sheath, and *interstitial neuritis* when it extends inward to the connective tissue surrounding the bundles and individual fibres.

In these forms of inflammation the nerve becomes red and swollen from hyperæmia and infiltrated with inflammation products, such as round cells and lymphoid elements, between the bundles.

The nerve structure itself—viz., the axis-cylinders and the myelin—is rarely the seat of inflammation, but when this occurs it is then called *parenchymatous neuritis*. This is generally secondary to inflammation of the connective tissue and is the result of excessive or prolonged pressure or irritation by the products of inflammation in the latter tissue; but it may be primary. In this form of inflammation the ordinary signs of inflammation (pain, heat, redness, swelling) are absent, and it is more properly speaking a degeneration. The *nuclei* beneath the neurilemma proliferate and the protoplasm about them increases in amount. The *myelin* becomes segmented, breaks up into droplets, then becomes granular and fatty, and finally is absorbed. The *axis-cylinders* become broken, granular, and ultimately disappear. The nerve fibres are ultimately reduced to a state of atrophic tubes, consisting of the neurilemma, containing only nuclei, granular debris, and pigment. The nerve fibres sometimes disappear and are replaced by fibrous connective tissue containing much fat—the “lipomatous neuritis” of Leyden.

Neuritis is termed *focal* or *localized* when only a limited area of a nerve is involved, *diffuse* or *disseminated* when continuous areas are the seat of disease, and *multiple* when many nerves are affected.

ETIOLOGY.

Focal or *localized neuritis* is caused by:

(1) *Exposure to cold.*

(2) *Traumatism*—such as wounds, compression, blows, stretching in fractures, and dislocations, etc.

(3) *Extension* of inflammation from neighboring parts, as of bones, joints, etc.

(4) *Microbic* and *autogenous* poisons.

Multiple neuritis is caused by:

(1) *Exposure to cold.*

(2) *Chemical poisons*, as alcohol, lead, arsenic, mercury, ether, naphtha, carbon bisulphid.

(3) *Microbic poisons*, as in typhoid fever, typhus fever, diphtheria, variola, measles, syphilis, septicemia, malaria, influenza, tuberculosis, leprosy, beri-beri, etc.

(4) *Cachectic conditions*, as in anæmia and cancer.

*Read before the Medical Society of Virginia during its thirty-fourth annual session, at Roanoke, Va., September 15-17, 1903.

(5) *Autointoxication.*

(6) *Idiopathic causes.*

SYMPTOMS.

(1) *Pain* is the most common of all the symptoms and is usually described as *boring, stabbing, shooting*. Tactile sense may not be impaired.

In my own experience, personal and with patients, the pain of neuritis is *sharp*, either *intermittent* or *continuous*, *increased* by motion, and occurs along the *course* and *distribution* of one or more nerves.

In facial neuritis it is *sharp, shooting, clutching*, in quality, *intermittent* and *increased* by motion of the jaws or lips and by touch.

In neuritis of the extremities it is *sharp, shooting*, generally *intermittent*, and *increased* on motion.

In intercostal neuritis it is *sharp, intermittent, increased* on motion, as in respiration, coughing, sneezing, and may become *tearing* in quality, as if a rib were being torn out.

In scapular neuritis the pain is *sharp, aching, increased* on motion, and *intermittent*.

In sacral neuritis it is *sharp* and generally *continuous*.

(2) *Tenderness on pressure* is a constant symptom, due, according to Weir Mitchell, to irritation of the *nervi nervorum* by the products of inflammation in the connective tissue. The tenderness occurs along the course of the nerve, and it is not linear but occupies a broad belt, showing that the branches are also involved.

(3) *Herpes* sometimes appears, forming groups or patches of vesicles along the general direction of the nerve, and it is very painful. This symptom, in my experience, most frequently accompanies neuritis of the intercostal and sciatic nerves.

(4) *Redness, œdema, and swelling* are said to occur sometimes, but I have never seen them.

(5) *Trophic disturbances*, as glossiness of the skin, impaired growth of the nails, and effusion into the joints, may occur in chronic cases, but they are rare.

In the case of mixed nerves, besides the sensory symptoms above mentioned, motor phenomena may occur in the muscles supplied by the affected nerves, such as impaired motion on account of pain, fibrillary twitchings, contractions, contractures, atrophy of muscles, reaction of degeneration, paralysis.

In *multiple neuritis* the above symptoms also occur, but they are connected with many nerves

and are more widely diffused, affecting either one or more limbs or the whole surface of the body.

The attack in multiple neuritis may, in addition, be ushered in by a *chill, high temperature, headache, backache*, aching in the limbs and joints, loss of appetite, and, in fine, all the symptoms of an acute infection. There may be intense pain in the nerves, which is, however, not constant, tingling, and formication in the fingers and toes, increased sensitiveness of the nerve trunks or of the entire part. Loss of muscular power, first marked in the legs, may come on gradually and extend upward like an ascending paralysis; sometimes the paralysis begins in the upper extremities. The extensors of the wrists and flexors of the ankles are first affected, causing "wrist" and "foot drop." In more severe cases there may be general loss of muscular power, which may extend to the face and chest, and respiration may become diaphragmatic. The muscles soften, become flabby, and waste.

In some cases the pain is not excessive, partaking only of the nature of hyperæsthesia, with soreness and stiffness of the limbs. Sometimes anæsthesia may be present or the sensory disturbances may be light.

PROGNOSIS.

The prognosis is generally good, though it should be guarded, and is sometimes grave.

Some cases recover in a few weeks; others in a year or two. In very severe cases death may occur in a week or ten days from paralysis of the heart or respiration or from coagula in the blood vessels. The severest cases are those due to cold, alcohol, diphtheria, and beri-beri. In the average case slow recovery, extending over many weeks, occurs.

Recovery may be complete, or it may occur with permanent damage (more or less) to the peripheral nerves, or to the central nervous system, thus leaving symptoms of ataxia, spastic paraplegia, or disseminated sclerosis.

An attack of neuritis, whether localized or multiple, may occur at any time, and indeed one attack predisposes to another.

TREATMENT.

The treatment of neuritis, whether focal or multiple, as it occurs in this climate, is exceedingly satisfactory and successful, provided the thorough co-operation of the patient can be obtained; otherwise it is exceedingly difficult. This fact should be forcibly brought to the attention of the patient at the outset, and he should be

impressed with the importance of uncompromising submission, else failure will surely follow.

The following is the treatment:

First remove the cause if possible, and then apply to the affected part:—

(1) Rest (which is a *sine qua non*).

(2) Protection from cold (by enveloping the part in cotton with a retentive bandage).

(3) Counter-irritation (preferably by means of *hot dry air*, and as a last resort the actual cautery).

I believe that in this climate by far the most frequent cause of neuritis is exposure to cold and dampness. Hence as a preventive measure every one should, in cold weather, wear flannel next to the skin with warm outer clothing, and, in rainy weather, gum coats and gum shoes. They should likewise avoid sitting, lying, and sleeping in draughts and damp places.

The ingestion of all the chemical poisons should be stopped at once, while malarial and syphilitic causes will have to be combatted by quinine, mercury, and the iodides.

But the most important treatment is local. The part affected should be kept at perfect rest, warm, and at a uniform temperature. This is a *sine qua non* in the treatment. The sick room should be kept at a temperature of 68° to 72° F.

In the case of the upper extremities, they should be heavily enveloped in wool or cotton wadding, with a snug bandage to hold it in place, and carried in a sling. The patient may in mild cases be allowed to sit about the house and even drive out in warm weather.

If any part of the trunk or lower extremities is the seat of the trouble, especially in the multiple variety, the patient should be kept in bed, a flannel shirt should be worn on the body next to the skin, and over this a thick cotton wadding or wool jacket. The lower extremities should be wrapped in cotton wadding and bandaged as the upper. In this way the inflamed areas are kept at rest and uniformly warm and protected from cold and variations in temperature. This is of the utmost importance. An air mattress is extremely desirable and useful in the prevention of bed sores and in otherwise adding to the comfort of the patient.

Hot dry air applications, once or twice daily for ten or twelve days, should be made to the inflamed areas. An entire upper or lower extremity, the back, shoulder, hip, abdomen, or side, and even the entire body, can be easily

treated by means of apparatus made for the purpose. The temperature may be raised to 300°, 400° and even 500° F. without any damage to the tissues and it is not even painful. Each application should last 25 to 35 minutes. The part treated becomes very hot and red, the blood vessels of the skin and underlying parts become enormously dilated, and the congested and inflamed nerve is thus depleted and soon becomes much less tender and painful.

I have seen cases of localized neuritis cured by the hot air alone in from seven to ten days. I consider this the most useful and valuable method that we have of treating this disease.

A thorough and systematic employment of the above treatment will, in my opinion, effect a cure in nearly all cases of localized neuritis in from one to four weeks. In the multiple variety it is not so successful and requires more time, and a resort to severer measures, as will be stated below, may be needed.

The actual cautery is a very efficacious method of treating neuritis and it will often relieve it in a few days or a week. It is equally applicable to the localized and to the multiple variety. It is, of course, painful, but most patients stand it without an anæsthetic, as the application can generally be made in a few minutes. But when it is used in multiple neuritis, as in the case of the whole trunk or a whole lower extremity, etc., or even a larger localized area, an anæsthetic should be advised. The strokes of the cautery, which should be of a bright red or white heat, should be very light and only the outer cuticle destroyed. The surface of the skin at first shows red stripes where it is touched, and these after persisting a few days gradually fade away and leave no scar. The burning should not be deep enough to cause vesicles or raw places, though it is sometimes difficult to avoid this to some extent.

Counter-irritation, by means of mustard, tincture of iodine, and cantharides, may be employed when it is not possible to use either hot air or the cautery, but they are very unreliable and unsatisfactory.

The systematic and thorough employment of rest in a warm room with the inflamed areas enveloped in cotton or wool will often effect a cure, but this method is slow and tedious, requiring many weeks.

In intercostal neuritis, when breathing or coughing is extremely painful or the patient is obliged to go about and is unable to be treated

systematically, strapping the side of the chest with overlapping strips of adhesive plaster, put on as tightly as they can be drawn, from the anterior to the posterior median lines, is very useful and gives great comfort.

Before closing I would like to cite a few cases illustrating the different modes of treatment:

Case I.—A man about 60 years old had neuritis of the branches of the ulnar nerve that supply the palmar surface of the little finger. The pain would shoot upward from the finger along the nerve to the elbow, and the little finger, when flexed, could not be extended without assistance. Ten applications of hot air relieved him with no return after nearly a year. He continued to work during the treatment.

Case II.—A young lady of 26 suffered with great pain and tenderness over the biceps muscle of the right arm. One of the branches of the brachial plexus was involved. Twelve applications of hot dry air entirely relieved her and after a year there has been no return.

Case III.—A lady of 50 had continuously great pain and tenderness on pressure in the left sciatic nerve at its exit from the pelvis. Crutches had to be used, as the limb was entirely disabled. She was completely relieved after ten applications of hot dry air. After the fifth seance she threw aside her crutches and walked without assistance.

Case IV.—A man of 55 afflicted with radial and ulnar neuritis was relieved by five applications of hot air.

Case V.—A woman aged 50 suffering with neuritis about the front of the wrist and ball of the thumb, completely disabling the hand, was entirely relieved by one application of hot air. These five cases received no other treatment than hot air applications.

Case VI.—A young lady of 17 was troubled with neuritis of the median nerve in the forearm. There was pain and tenderness extending from the palm of the hand up the front of the forearm to its middle. She was cured by eleven applications of hot air, the hand and forearm being kept in a splint in order to immobilize them.

Case VII.—A middle aged woman suffering with neuritis of the intercostal nerves of one side extending from the posterior border of the scapula downwards and forwards to the front of the chest was entirely relieved in a few days by one application of the actual cautery.

Case VIII.—Two men aged 30 and 35—

brothers—had intercostal and lumbar neuritis of one side and were cured by one application of the cautery. Relief was complete in two or three days.

Case IX.—A young man about 30 had violent neuritis just above the right clavicle and extending out over the point of the shoulder. One application of the cautery effected a cure in three or four days.

Case X.—A young woman of fine physique and previous general health complained first of neuritis of the anterior tibial nerve on the dorsum of each foot. From these points it extended up along the principal nerve trunks of the lower extremities and then spread over the whole trunk and affected even the scalp and face—thus becoming *multiple*.

The treatment was rest in bed in a warm room with the whole surface, limbs and trunk enveloped in a cotton wadding suit. Alkalies were given internally with a milk diet.

It was fourteen weeks before the patient was able to get up and go about and she seemed to be well. She then spent $2\frac{1}{2}$ years in a warm climate leading an outdoor life, enjoying perfect health. She then returned to this country and suffered an attack similar to the first. Not wishing to go through with the same tedious course of treatment, she consented to the use of the cautery. An anæsthetic was administered and the whole surface of the body and extremities was carefully striped with the actual (Paquelin) cautery. There was much suffering for a few days from the cauterization, but the patient was able to sit up in about one week. In two weeks, though, there was a relapse and general cauterization was again resorted to with immediate relief for three weeks. The old trouble then returned, and while still multiple it only affected the lower part of the trunk and lower extremities and entirely disappeared after the use of the cautery. There was then a respite for six months, at the end of which time both legs were affected, but were relieved in a few days by the cautery seemingly permanently, as there has been no return in three years.

This patient experienced the most extensive application of the cautery that I ever heard of, but the previous fourteen weeks in bed made her prefer it to the more tedious treatment.

Case XI.—A young lady about 30 was confined and experienced a very severe labor, which had to be terminated by forceps. In about 2

weeks multiple neuritis developed in both lower extremities, extending over their whole surface.

The treatment was rest in bed in a warm room with both extremities enveloped in cotton wadding, electricity and iodine locally, and the alkalies and salicylates internally. After 14 weeks she was able to go about, though the pain still persisted to some extent and disappeared very gradually and slowly. The cautery was not used, as the patient would not consent to it.

Case XII.—A young man with multiple neuritis of both upper extremities, shoulders, chest in front and behind, hips and both lower extremities, was only relieved after six applications of the cautery (several times from the neck to the toes) and fifty applications of hot air to the upper extremities and shoulders. No anæsthetic was used.

In the first eleven cases above mentioned, in which the cautery was used, no other treatment was employed. The cauterized parts should be sponged with alcohol or a one per cent. solution of picric acid and kept dressed with gauze soaked in the latter, over which dry cotton is bound. This relieves the burning pain very quickly. Or the part may be kept enveloped in towels wet with ice water until the pain of the cauterization disappears. An ointment containing 20 grs. of orthoform to the ounce of zinc ointment is also useful.

In my opinion, then, the best treatment for neuritis is:—

Rest, warmth and hot air—and as a last resort the cautery.

Internal medication is of no avail, except in case of rheumatism, syphilis and malaria.

Book Notice.

Songs of all the Colleges, including Many New Songs.

Compiled and arranged by DAVID B. CHAMBERLAIN (Harvard) and KARL P. HARRINGTON (Wesleyan). Hinds & Noble, Publishers, 31-35 W. 15th St., New York. Quarto. Pp. 330. Cloth, \$1.50, postpaid.

Every college has its "yell" or song. This attractive book with beautifully open music pages—words and music throughout—contains the songs of most of the colleges and universities, which carry one back to the days that make him almost wish he were "one of the boys again." Beside the distinctive college songs,

this volume contains many familiar pieces, set to music, sung by students of all colleges and in many homes—such as "Annie Laurie," "Down by the Riverside," "Down in Mobile," "Jaunita," "Listen to my Tale of Woe," etc. As one of the reviewers has said: "It is a symposium of the pathos and romance, the wit and the nonsense of college life." The work is unique; every page is of interest, and many an hour at home or in the social circle may be pleasantly spent in reproducing almost any of the songs. It is a book for the parlor, or as a gift from friend to a friend. In proof of its popularity, though published but little over a year, we are informed that "ten editions have already made their way into many thousand homes."

Editorial.

Meetings of North Carolina Medical Society and Medical Examining Board.

The annual session of the North Carolina Medical Society will meet in Raleigh May 24-26, 1904. The North Carolina Board of Medical Examiners will meet May 18, 1904.

Tyree's Antiseptic Powder is one of the most generally useful antiseptic powders for hospital practice or in the office local treatment of leucorrhœa arising from various causes, as uterine and vaginal catarrhs that has ever been introduced. It is valuable as well in gonorrhœa, gleet, and such diseases of the mucous passages. It is serviceable also in dysentery, in catarrhal inflammations of the nose, throat, mouth, gums, etc. Dr. W. M. Gray, Microscopist to the Army Medical Museum at Washington, D. C., by tests, has proven conclusively its bactericidal action as to the anthrax bacillus, the staphylococci of pus, etc. It combines the qualities of such agents as salicylic acid and boric acid, so that its application to diseased mucous surfaces has a mild, stimulating and astringent effect in the rapid healing of diseased tissues. While it may be applied as a powder, when circumstances demand, the economy of its use consists in the fact that water (so as to make from 10 to 50 per cent. solution) may be added at the time its use is required.

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Original Communications.

NINE CASES OF RESECTION OF THE INTESTINE.

By GEO. TULLY VAUGHAN, M. D., Washington, D. C.

Assistant Surgeon-General U. S. Public Health and Marine Hospital Service, and Professor of Surgery of Georgetown University, Washington, D. C.

By resection of the intestine is meant cutting out a segment of the tube so as to leave two open ends. These ends may be treated in one of two ways—first and much to be preferred is their union, either end to end or laterally, by means of one of the numerous methods in use, and the restoration of the continuity of the intestine; or second, the formation of an unnatural anus by attaching the open ends to the skin—a measure which may be necessary when the patient's condition will not permit a prolonged operation, when the viability of the remaining intestine is doubtful, or in cases of general peritonitis.

Resection is indicated when it is necessary to get rid of malformed, diseased or injured portion of the intestine, as in congenital or acquired stricture, malignant tumors, intussusception, fecal fistula, gangrene from hernia, volvulus, or mesenteric thrombosis, and severe traumatism as from gunshot wounds.

The best method of uniting the ends is by suture, and the best suture is one that penetrates all the coats of the intestine and approximates the serous surfaces—the best type of which is the Connell suture with all the knots on the inside.

Of the numerous mechanical devices for uniting the ends of the intestine, the Murphy button is to be preferred, in spite of the fact that it is a large unabsorbable foreign body which has to remain in delicate tissues for a considerable time where it may possibly produce gangrene, ulceration or obstruction of the bow-

els. Yet its superior advantages in the rapidity, simplicity and facility with which it can be used, will often make it the method of choice. The best field for its use is in the small intestine in end-to-end union.

Most of the complicated instruments which have been invented to aid the introduction of sutures in the intestine may be passed over without discussion—they are more ingenious than practical, and often the union by suture could be completed during the time taken in adjusting the intestinal forceps or other aid which may be used.

During the last three years I have resected the intestine nine times with five recoveries and four deaths. Five of the resections were done for strangulated hernia with three recoveries and two deaths, and four done for tumor of the colon, with two recoveries and two deaths. The resections for hernia were all on the right side—two inguinal and three femoral—and the two deaths were both cases of femoral hernia. The resections of the colon were for tumor—twice in the hepatic flexure, once in the splenic flexure and once in the sigmoid flexure.

The methods of union were by the Murphy button, five with three deaths; and by suture, three, all of which recovered. In one case the ends of the intestine were left ununited. As a matter of justice to the button it must be stated that it was used in the worst cases while the suture was used only in the most favorable cases. The Connell suture was used in two cases and in one case two rows of continuous sutures were used—the first through all the coats and the second omitting the mucous coat.

Mortality.—The mortality of any large series of intestinal resections must be high—chiefly on account of the serious conditions for which resection is demanded; and of these conditions, the most serious is gangrene of the intestine on account of the liability of infection, peritonitis and toxæmia. The mortality of 44 per cent. in my cases is probably higher than the average

* Read by title before the Medical Society of Virginia during its session at Roanoke, Va., Sept. 15-17, 1903.

mortality from intestinal resection at the present day, and yet in none of the fatal cases was there much reason to expect a different result. Thus in Case No. 8, the operation was done on a delayed case of typhoid perforation with a general peritonitis, when a tumor was found in the colon, the accidental perforation of which required excision. Under such unfavorable conditions recovery could not reasonably be expected. Cases No. 2 and No. 4 both had the beginning of general peritonitis when operated on, and Case No. 9 was almost in a moribund condition—all desperate cases but in which an operation was thought to give the only hope. All were victims of delay. I believe that all four of these cases would have recovered had they received surgical attention at the proper time.

At the meeting of the British Medical Association in July 1903, G. H. Makin stated that the mortality from resection of the intestine at St. Thomas Hospital was 53 per cent. More recent statistics from the same hospital gave a mortality from the lateral method of union of 30.7 per cent. Twelve end-to-end unions of the large intestine gave a mortality of 50 per cent. while eight side-to-side unions gave a mortality of only 25 per cent. Fuchsig reports 24 end-to-end unions with a mortality of 54.16 per cent. and 16 lateral unions with a mortality of 37.5 per cent.

Littlewood did 11 enterectomies of the large intestine with a mortality of 27 per cent. Von Eiselsberg had 12 resections for intussusception with a mortality of 25 per cent. Dunn did 16 enterectomies with a mortality of 25 per cent. Gibson collected 74 cases of resection with enterorrhaphy for other causes than hernia with a mortality of 74 per cent. He also collected 225 cases of resection with primary enterorrhaphy for gangrenous hernia with a mortality of 26 per cent., and in 63 cases in which the Murphy button was used the mortality was only 22 per cent.

Case 1.—Strangulated inguinal hernia associated with volvulus; gangrene; excision of 28 inches of ileum; recovery.

July 8, 1900, W. S., male, negro, aged 60 years was admitted to the Emergency Hospital. History: Patient has had a right inguinal hernia many years and had an operation on it ten years ago, but the nature of the operation could not be ascertained. At any rate the hernia soon returned and the patient wore a truss. About

11 o'clock on the day of admission to hospital while lifting a heavy cake of ice the hernia came down in spite of his truss and on attempting to reduce it he found that he was unable to do so. There was severe pain soon followed by nausea and vomiting. On examination at 3 P. M., 4 hours later, a tumor about the size of an adult head, tense and dull on percussion over the lower part, was seen occupying the right side of the scrotum and inguinal region. Under chloroform anæsthesia the sac was opened by a long incision and was found to contain a large mass of intestine including the cæcum, ileum and a portion of the omentum—the last being adherent to the bottom of the sac which was anatomically of the congenital variety. The intestine was considerably congested but otherwise in good condition and was returned to the abdominal cavity when to my surprise, down came a long coil of black, gangrenous intestine which up to this moment had been concealed within the abdominal cavity.

The strangulation was probably due to the volvulus or to compression by the limbs of the portion which was fixed in the scrotum. The gangrenous portion was pulled down at each end until sound gut was reached and 28 inches were removed, the ends united by means of a Murphy button and reinforced by one row of Lembert sutures. The mesentery was cut parallel with gut—not V shaped—the vessels ligated and the edges of the mesentery united by two rows of silk sutures—one on the upper and one on the lower surface, inverting and completely concealing the cut edges.

The great omentum adherent to the bottom of the sac was ligated, cut off and returned to the abdominal cavity. The sac was ligated just above the testicle and cut off and the upper portion separated from the cord to within the abdominal cavity when it was sewed across with kangaroo tendon and Bassini's operation for the radical cure completed.

There was no trouble after the operation. Calomel and soda were given on the 9th and sulphate of magnesium on the 10th—half a dram every hour—3 evacuations occurred. The button passed on the 22nd, 14 days after the operation. Its appearance was preceded by griping in the abdomen for 48 hours. First dressing on July 18 when primary union was found to have occurred and the stitches were removed. Patient made an uninterrupted recovery.

ery and was discharged July 26—18 days after the operation and was perfectly well when heard from one year later.

Case 2.—Right strangulated femoral hernia; gangrene; excision; death after two weeks.

This patient was a married woman 41 years old, in good health except for a femoral hernia which had existed for two years and for which she wore a truss. December 5, 1900, after dinner she was taken with severe pain in the abdomen and vomited. A physician was called in who said that he reduced the hernia but the vomiting continued at intervals and so did the pain except when the patient was under the influence of morphine.

On examination on December 14, nine days after the trouble began, the patient was found lying in bed free from pain but with the pinched face of peritonitis, abdomen slightly distended and slightly tender to pressure, temperature 98.6 and pulse 120. There had been no bowel movement during nine days except what resulted from enemata. A small tumor was felt at the saphenous opening so operation was advised and performed without delay.

Under ether the abdomen and hernial sac were opened by an incision dividing Poupart's ligament, revealing about two inches of gangrenous ileum in the hernial sac and general peritonitis—effecting both parietal and visceral layers of peritoneum, with a greyish fluid in the peritoneal cavity.

About four inches of intestine were removed and the ends united with a Murphy button and reinforced with one row of silk Lembert sutures. The mesentery was united by two rows of silk sutures—one on each surface, approximating the serous surfaces and burying the cut edge between them. All the small intestines which could be removed were then drawn out of the abdominal cavity and washed with salt solution and wiped free of lymph while the abdominal cavity was irrigated with salt solution, after which the intestines were returned and the abdomen closed without drainage. The sac containing the gangrenous intestine was dissected out and a gauze drain placed below Poupart's ligament where the sac had lain.

The patient did well for a few days—there was very little vomiting but the pulse was never less than 110, profuse diarrhœa set in and death occurred on December 28.

A partial necropsy showed general peritonitis—the coils of the intestines being glued to-

gether and covered with lymph and pus. The coil containing the button was dark colored and gangrenous for some distance of each side of the site of union. Union had taken place but the parts were easily torn asunder. The button was free within the intestine and had not moved from its original position.

Remarks Criticising the treatment of this case in the light of more experience I should have removed more intestine in order to get into as sound tissue as possible and I should not have eviscerated the patient for the purpose of cleansing. As to whether I should have left in drainage—that is a matter of opinion—there seemed no use for it in this case as shown by its subsequent course as there was little or no fluid in the cavity at the postmortem.

Case 3.—Right strangulated femoral hernia; resection and suture; recovery.

Mrs. S. J. F.; white female; aged 50 years; native of New York; dressmaker; had been troubled with a right femoral hernia for about 20 years and had worn a truss at times.

September 8, 1901, the hernia came down, she could not return it, it became painful, vomiting set in and occurred daily. On the day of operation at the Emergency Hospital four days later, the 12th, the vomitus was stercoraceous. A small tumor was seen at the saphenous opening. Under chloroform first, then ether, the sac was exposed by a curved incision with the convexity below. On opening the sac a coil of black small intestine was found, and on relieving the constriction by cutting Poupart's ligament a large quantity of fluid escaped from the peritoneal cavity. Five inches of intestine were removed and the ends united with continuous silk sutures—the first row being through all the coats and the second through all except the mucous. The mesentery was cut parallel with the intestine and united with two rows of silk sutures—approximating its serous surfaces above and below so as to bury the cut edges. The radical operation for the cure of femoral hernia was then performed, using kangaroo tendon and closing the skin with silkworm gut sutures.

Calomel and soda tablets were given next day but seemed to increase the vomiting which continued with a fecal odor until the 18th, six days after operation, although the patient was comparatively free from pain—pulse running between 100 and 110 and temperature 98 to 100. From September 18 to 22 all the symptoms

were worse, especially the vomiting, and the patient was expected to die, but the vomiting ceased on the 22nd, the pulse fell to 110, the bowels acted regularly after this and the patient slowly recovered and was discharged November 10—nearly two months after operation.

Remarks: The trouble after operation in this case was caused by the long delay after the hernia became strangulated before operation, during which peritonitis set in.

Case 4.—Right strangulated hernia; gangrene; resection; use of Murphy button; death.

J. K.; white male; farmer; aged 60 years; native of Ireland; had suffered from a right femoral hernia for 30 years. It came down while he was traveling March 31, 1902, and he could not return it. Next day he had vomiting, hiccough and violent pain in the abdomen especially marked in the left hypochondriac region. This was his condition when admitted to Emergency Hospital April 2nd. The pulse was 100—the tumor was about the size of a goose egg, tense and somewhat tender, but the greatest pain was in the left hypochondrium so that it was difficult to convince the patient that a little tumor at such a distance from the seat of pain could be the cause of his trouble—so he would not consent to an operation until April 3rd three days after the first symptoms of strangulation.

Under chloroform first, then ether, the sac was opened by a longitudinal incision dividing Poupart's ligament. The contents of the sac were found to be 3 inches of gangrenous ileum and a portion of damaged omentum. The omentum was ligated and removed and on drawing out the intestine for examination, thrombi in the mesenteric veins were found over an area requiring the resection of 18 inches of intestine. A Murphy button was used and one row of sutures for reinforcement—the mesentery being treated in the usual way. The sac was dissected out, ligated above and excised and the divided tissues united with kangaroo tendon—the skin with continuous silkworm gut sutures leaving a place for draining the former location of the sac.

During the operation the pulse ranged from 120 to 140. Next day the patient seemed better—pulse 96, temperature 98, and there was less vomiting. April 5 the vomiting was worse, the calomel and soda given the day before failed to produce a fecal evacuation although gas was freely passed. April 7 death occurred.

The necropsy showed general peritonitis and

gangrene of 3 or 4 feet of small intestine including the point of junction and extending principally on the proximal side.

Remarks: Evidently not enough intestine was removed at the operation to get beyond the veins which contained infected thrombi and later caused peritonitis and gangrene of an additional portion of the intestine.

Case 5.—Strangulated right oblique congenital hernia; gangrene; union by Murphy button; recovery.

W. C.; negro male; aged 76 years; native of Maryland; laborer; admitted to Emergency Hospital March 24, 1903. Patient stated that he had been troubled with hernia for five or six years and it came down on the day before admission and he could not return it. Pain and vomiting followed. On examination a hard tense swelling about the size of an orange, tympanitic on percussion and without impulse on coughing was seen in the right inguinal region and upper part of the scrotum. Pulse 110.

Under chloroform the sac was opened about 24 hours after the hernia began to pain him. A coil of black intestine came into view followed by about 100 c. c. (3 oz.) of dark colored fluid. The constriction existed at the internal ring and required the division of some of the fibers of the internal oblique and transversalis muscles. The intestine was then drawn down covered with hot moist cloths for 15 minutes, but as there was no improvement in the circulation eight inches were excised and the ends united with a Murphy button and one row of sutures. The mesentery was treated in the usual way. The coil of intestine resected was the lower part of the ileum. An operation for the radical cure of hernia was then done.

The sac being continuous with the tunica vaginalis was not dissected from the cord, but a suture of kangaroo tendon was passed around its neck high up and tied. The conjoined tendon, Poupart's ligament and external oblique were then sutured together in front of the cord. No drainage.

The patient stood the operation well and had no serious symptoms afterwards. Hiccough was a little annoying for three days and there was no fecal evacuation for seven days in spite of calomel and soda. The button came away without difficulty April 19; just 26 days after its introduction and the patient was discharged recovered one week later.

Case 6.—Adeno-carcinoma of the hepatic

flexure of the colon; resection; union by Connell's suture; recovery.

J. M.; white male; aged 42 years; native of ———; gave the following history: Father died of consumption, mother of dysentery—five brothers and three sisters living and in good health. Patient had painter's colic 7 years ago—grippe 10 years ago and for 3 years in succession.

Present illness began in October, 1901, with constipation and pain in the stomach. About the last of December he began to vomit—at first about once a week, then daily—the constipation being marked and obstinate. Preceding the vomiting there was "heartburn" and violent peristalsis—regular storm waves with the formation at times of gaseous tumors. These tumors usually occurred in the right iliac region as local, circumscribed swellings, having almost the consistency of solid tumors but they would disappear after awhile and return again. A diagnosis of stenosis of the intestine about the ileocaecal region was made and the patient was operated on March 17, 1902, at the Georgetown University Hospital.

Under ether, the abdomen was opened through the right rectus muscle and a small, hard, gristle-like tumor was found in the hepatic flexure of the colon, causing rather a constriction of the colon than a swelling. The mesocolon was ligated, the colon detached and six inches were removed with four or five slightly enlarged lymphatic glands. The proximal end was dilated to almost twice the size of the distal end so it was partly closed with sutures and the two ends were united by Connell's sutures. The abdomen was closed in the usual way with through and through silkworm gut sutures and catgut sutures to unite the peritoneum and sheath of the rectus.

The patient had an uninterrupted convalescence and was discharged April 14. Seen a year later, the patient was in good health.

Case 7.—Adenocarcinoma of the splenic flexure of the colon; obstruction of the bowels; enterotomy and colostomy; later excision of the splenic flexure; union with Connell's suture; recovery.

M. W.; white male; aged 43 years; native of Tennessee; inventor; was admitted to the Emergency Hospital April 7, 1902. The patient had suffered four or five years with pain in the right side about the last rib and had been treated by osteopaths, homeopaths, etc., but

with no permanent relief. At the same time there was increasing constipation from 2 or 3 passages a week to one a week and on admission to hospital he had not had a passage for two weeks in spite of purgatives and enemata. During the last four days there was vomiting. The pulse was less than 100 and the patient was not suffering greatly although the bowels were enormously distended and tympanitic. No tumor could be felt.

Under ether the abdomen was opened through the right rectus muscle and one of the coils of the distended small intestine was opened allowing the escape of a large quantity of fluid fecal matter after which the opening was sewed up. The hand was then introduced and search made for the obstruction. The ascending colon was greatly distended, showing that the obstruction was below that point, therefore the dilated colon was traced on until a small, hard tumor was felt in the splenic flexure—the intestine below being collapsed. As the tumor could not be dealt with without making another incision and as it was advisable not to tax the patient's strength much further, it was decided to establish an artificial anus and wait until the patient's strength improved enough to justify the removal of the tumor. Therefore an opening was made in the caecum, the parietal peritoneum stitched to the bowel all around the opening and a short distance from it and the edges of the opening were stitched to the skin.

There were no bad symptoms and nineteen days after the first operation, on April 26, the patient was etherized and the abdomen opened along the outer border of the left rectus muscle. The colon was found fixed so closely to the posterior abdominal wall that it was necessary to make a transverse incision outward from the centre of the first incision. The proximal portion of the intestine was dilated and thickened—the portion distal to the tumor contracted and thin. Four inches of colon with two or three slightly enlarged mesenteric glands were removed and the ends united with the Connell suture. The abdomen was closed with through and through silkworm gut sutures and catgut for the peritoneum and muscles.

The after treatment consisted in keeping the colon beyond the artificial anus plugged with gauze so that no fecal matter would pass over the point of junction until it was considered safely united. May 10th, two weeks after operation, packing of the colon was left off, and after this

the evacuations followed the normal route except what little escaped through the artificial anus.

May 24th, four weeks after the second operation, the patient was discharged recovered, but still having the artificial anus which he was advised to have closed later on. August, 1903, fifteen months after operation, the patient was seen. He was in good health, had gained his lost weight, the bowels were regular, and by wearing a pad over the artificial anus he controlled it fully and was not ready to have an operation done for its closure.

Case 8.—Laparotomy for Typhoid Perforation; Cancer of Colon Discovered; Resection; Death.

R. C.; white male; aged 50 years; blacksmith; admitted to Georgetown University Hospital April 15, 1902, with a diagnosis of typhoid fever, although patient said he had typhoid fever when fifteen years old.

On admission to hospital the pulse was 96, temperature 100.6, respirations 20, mind perfectly clear, but tongue dry, pointed and tremulous. Calomel one-fourth of a grain every half hour till two grains were taken was ordered to be followed by half an ounce of magnesium sulphate. Three passages occurred between the 15th and 17th. Early in the morning of the 17th he was seized with severe cramps in the bowels, and vomiting. These symptoms continued until I saw him at 11 o'clock that night—about 17 hours after the cramps came on. At that time the pulse was so rapid that it could not accurately be counted, but was estimated to be from 160 to 200; vomiting about every five minutes; mind perfectly clear; great thirst; abdomen soft throughout and not distended but tender in both iliac regions; tympany on the left side, and dullness on the right extending from the iliac fossa to the liver. A diagnosis of perforation and peritonitis was made, and under ether laparotomy was immediately performed.

On opening the abdomen general peritonitis was found, the intestines being covered with lymph and the peritoneal cavity containing at least 1000 c. c. (1 quart) of pea-soup-like fluid. An opening large enough to admit the end of the little finger was found in the ileum about 20 inches from the cæcum and was closed transversely by a single row of Lembert silk sutures. The intestines were drawn out, wiped off with gauze and the peritoneal cavity irrigated with salt solution. In exploring the abdominal cav-

ity with the hand a tumor of the sigmoid flexure about at its junction with the rectum, was discovered, and in examining it the finger was accidentally thrust through the intestinal walls at the site of the tumor. This required resection, which was hurriedly done—the upper end of the rectum being closed while the lower end of the colon was brought out and stitched to the skin. Gauze drains were provided. Death occurred on the 19th, 33 hours after the operation.

Necropsy. Intestines inflamed and adherent. Lower part of small intestine dark colored and contained twelve ulcers—round, oval or irregular in shape—varying in size from one-half to two centimeters ($\frac{1}{2}$ to $\frac{4}{5}$ inch) in diameter—most of them situated with their long diameter transverse to the long axis of the intestine and on the opposite wall from the mesenteric attachment. No other perforation was found. The spleen weighed 210 grains (1 oz.) and was larger and softer than normal. The tumor removed from the colon showed under the microscope the typical structure of an adeno-carcinoma.

Case 9.—Tumor in the Hepatic Flexure of the Colon; Resection and Union by Murphy Button; Death.

J. W., male negro; aged 29 years; native of Virginia; laborer; admitted to Emergency Hospital June 8, 1902. This patient gave a history of constipation and pain in the bowels extending over a period of three or four months. A week before admission complete obstruction set in and there was great pain, with abdominal distension and vomiting. On the morning of the operation, June 9th, the pulse was 120, temperature 97.4, skin cool, abdomen tympanitic all over but less so in the left iliac fossa than elsewhere. The abdomen was opened through the right rectus muscle and the bowels evacuated through an opening in the small intestine, which was afterwards sutured.

The bowels having collapsed somewhat, search was made for the obstruction. As the sigmoid flexure and the transverse colon were collapsed, it was evident that the obstruction was above that point and it was found as a hard lump in the hepatic flexure of the colon, lying on the right kidney. Owing to the immobility of the intestine a transverse cut was necessary in order to gain access to the tumor. Four inches of intestine were resected and the ends united with a Murphy button and one row of sutures. The abdomen was closed in the usual

way. Death occurred from exhaustion seven hours after the operation.

The tumor removed was hard like gristle, looked like a cancer and produced complete obstruction of the bowel, but the pathologist who examined it said that it did not have the histology of cancer.

Remarks.—This patient's life would have been saved in all probability had he been operated on one week sooner. It might have been better to establish an artificial anus and later on to remove the tumor.

DESCRIPTION OF A CURIOUS CASE OF MALFORMATION—CHILD BORN WITH HEART OUTSIDE OF ITS BODY.*

By J. GATES GOODE, M. D., Cheriton, Va.

Since the time of Hippocrates the anomalous and curious have been of exceptional and persistent fascination to man. The case I am about to report is certainly an exceptional anomaly from any I have read or heard of.



On the night of January 7, 1904, I was called to attend Mrs. O. in labor. She was a white primipara, age 27 years. Her labor was per-

* Read at the sixth annual meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Danville, Va., February 23 and 24, 1904.

fectly normal; gave birth to a girl baby the next morning at 7 o'clock. Weight of child 5½ lbs.

Upon examining the child I found that its heart was outside of its body. With the exception that the cord was attached higher up than usual, the child was perfectly normal otherwise. *The heart protruded from the chest through a small opening just large enough to permit the vessels to enter the cavity, and corresponding in position with the second piece of the sternum (gladiolus).* The integument at the lower part of this foramen was continuous with the covering of the blood vessels; not so above. The heart was perfectly normal in size and shape—the auricles, ventricles and auricular appendices being very distinct and well defined.

The cord was attached about one inch below the heart, corresponding in position with the ensiform appendix.

The first piece of the sternum (manubrium) was intact; the other two (gladiolus and ensiform appendix) were either absent or divided in the centre and attached to the sternal extremities of the ribs on both sides of the heart.

The child did well for some days, but the walls of the heart gradually got thicker and thicker, and at the end of sixteen (16) days the child died.

From the birth of the child I had the heart anointed with olive oil about every three (3) hours, and kept it protected from all clothing, etc., with a pasteboard appliance, cone-shaped, placed over the organ.

The child was nourished with Horlick's Malted Milk, as the mother could not well feed it from the breast without mechanical injury to the heart.

The following doctors besides myself saw the child in life: Dr. G. W. Holland, Eastville, Va.; Dr. G. P. Moore and Dr. B. Kellam, Cape Charles, Va.

New Orleans Polyclinic.—Seventeenth annual session opens November 2, 1903, and closes May 28, 1904. Physicians will find the Polyclinic an excellent means for posting themselves upon modern progress in all branches of medicine and surgery. The specialties are fully taught, including laboratory work. For further information, address, New Orleans Polyclinic, Post-office Box 797, New Orleans, La.

JOTTINGS FROM A PRACTITIONER'S NOTE-BOOK ABOUT GONORRHOEA AND RHEUMATISM.

By GEO. F. SOUWERS, M. D., Germantown, Phila. Pa.

Something over a quarter of a century ago there resided in the city of Philadelphia a man who had grown rich and also world-famous by the manufacture of saws—not the kind that are wont to be used in pointing moral lessons and good advice, and commonly known as proverbs, but the sort that unexpectedly rip the fingers of amateur carpenters and makers of wonderful household furniture out of half a mackerel keg, and incidentally thus help to produce revenue (if the bill is ever paid) for deserving and needy saw-bones, *genus doctores*. Now this gentleman gathered unto himself an apoplexy, the resultant of which was a complete lateral paralysis. Somewhere in Biblical lore there is an account of an individual of whom, after reciting his claims as a first-order invalid, the story goes on to state, "that he had expended much or most of his substance upon doctors in his efforts to regain his health." Had the gentleman lived in these days, he would have banked his substance, hied himself to the nearest hospital or clinic, gotten free treatment and medicines, and laughed in his sleeve at the fool doctors who seem to be insanely crazy on the subject of building up medical pauperism of the community by alleged medical charity.

But to return to the gentleman who strove to emulate the example of the invalid of the far East. This man, too, spent largely of the circulating medium among various doctors, but with little success, in trying to rid himself of his paralysis. Somehow he learned that over in Kensington, an eastern district of Philadelphia, there lived a doctor who had completely cured himself of a trouble exactly similar to that from which he suffered. A friend of mine happened at the time to be a tutor in the family of the paralytic saw man. One afternoon he requested my friend to accompany him in the carriage on a pilgrimage to the Kensington Esculapius. This meant a drive clear across the city, and all the way over the sick man was chipper in disposition as a bride who has married a million, for now he was surely on the road to regain that which we are told is worth more than wealth. Upon arriving at the Mecca of their hopes an interview with the doctor who had wrought miracles upon himself was grant-

ed, when, to the utter disgust and dismay of the pilgrims, it was found that not only had the unhappy doctor not cured himself, but, if anything, he was in a decidedly worse plight than the man who had come to be healed. On the passage home not a word was uttered until just as the carriage was entering the stable, when the now hopeless, but still evidently philosophical victim remarked, in a testy yet satisfied manner, "that there was one satisfaction, at any rate; that these damned doctors got it themselves once in a while"—a whole system of consolation boiled down to an aphorism with which I have often comforted myself in the years since gone by.

Now the moral and application of this rather long preliminary story is this: By an unhappy choice, certain microbes elected to camp and settle upon the mucous membranes of my ocular apparatus, and sportively treated me to an A-1 dose of what the laity have christened "pink eye." Personally I came to the conclusion that the laity must have been slightly color blind as to shades, for I am ready to take affidavit that if our western friends are right in dubbing whiskey as "red eye," then my state of affairs would have been the best selling sample that any salesman would require, judging, too, from the amount of water that poured from them. I could well fancy that the microbial invaders in their colonizing conveniences included a leaky town reservoir—mayhaps that a microscopic investigation would reveal a close resemblance between them and the political reservoir builders of our American cities; science demonstrates queer racial characteristics occasionally. Not being altogether a novice in eye troubles, having served long periods on the eye staff of one of the largest hospitals of the city, I proceeded to make matters interesting for mine enemy. My eyes and lids swollen and closed would have been a first order advertisement, in appearance, of the danger of fooling with the business end of a pugilist's striking apparatus. In the midst of this state of affairs, whilst mentally bemoaning the fact that if some other fellow had it I might be charging him for visits, the saw-man's summing up of righteousness occurred to me, but I cannot say truthfully that I could argue myself to the same conclusions. It is claimed that doctors are the most impatient of patients, and perhaps it is so. At any rate, perhaps I was guilty of the charge at this time, or else I had acquired a most virulent attack, for noth-

ing seemed to make a killing impression upon the condition.

Idly looking through a desk in my office I happened to come upon a sample bottle of protargol which, at the time I write of, was a new thing. In a spirit of philanthropy I decided to offer myself up as a victim on the altar of experiment, especially as my usual mascots seemed to be of little avail, and sent the bottle to a neighboring druggist with a request that he make me a two per cent. solution of protargol. Now whether it was that the height of the distress had been attained and the condition would have declined at any rate, I cannot say, of course, but I do know that affairs improved very decidedly after using the drug. I appreciated very thoroughly how thankful an old German felt—but, understand, from a different cause, for I then was a bachelor—to the proprietors of a patent nostrum which seemed to have brought him a happy release from his troubles. It transpired that his wife was a victim of insomnia; all kinds of doctors and drugs, etc., had failed to work. By some chance he came across the nostrum referred to, dosed the old lady with it, and presto—the desired end was attained. In a spirit of gratitude the old man wrote to the proprietors of the mixture in the following (perhaps truthful) strain: "My wife she cannot sleep at night, and toss the whole bed over; und by that reason I don't get some sleep too; aber, she takes two bottles of your medicine, and now she can sleep all night mit any man." So I felt thankful to protargol.

On the contrary, however, I know of one man, who, had he had the original discoverer of protargol in London, England, one night about a year ago, would have made of him a beautiful subject for the coroner to sit upon. A patient of mine was about to make his first trip abroad in company with another innocent. He came to me and asked that I lay his trip out for him, which I did by writing in a vest pocket note book an itinerary of each day and certain general information as to money, method of travel, etc. Among some verbal instructions I told him that at night the pavements around the Alhambra Music Hall presented the greatest display of ladies who had hypothecated their virtue he would probably ever see; that he could hear there pretty nearly every language used in civilized countries under the canopy; that the mix-up at Babel was only a circumstance by

comparison. I also warned him that history and tradition said that these sylphs handed out souvenirs very freely in the shape of venereal remembrances, and suggested to him that while *per se* virtue was its own reward, he might make the chance of reward doubly sure by abstaining from even the appearance of evil. He assured me that as he was going on a pleasure trip and was limited in time and could not spare even a moment to nurse any such trouble; he intended to take no chances. After I had given him his book and instructions a few days before his sailing, knowing my bird very thoroughly, it occurred to me that it might be well to take Time by the foreskin—I mean forelock, and so wrote him that in case he should accidentally meet some one careless enough to bump into and tople him off his pedestal of virtue, it might be well to at least make an attempt at precaution, and, as far as possible, to prevent the results of dallying with hot irons. With this note I sent a saturated solution of protargol and instructions that if, at any time on his trip he should succumb to the blandishments of the foreign angels and retire with them to their heavens, he should dilute the contents of this amulet with so and so much water, bringing it to about a two per cent. solution, and gently but firmly inject it with a syringe. I did not guarantee immunity to him from the "military drop" if he followed military orders, but told him he would probably feel more comfortable even if necessity compelled him to make a prolonged acquaintance with syringes, etc., in that he had at least made a more or less valiant attempt upon the enemy *de novo*. In reply he wrote me from the Capes that while his intentions were still, like Gibraltar, unassailable, yet he would give due heed to my wisdom.

One Sunday morning our heroes landed in Liverpool, thus far, at least "unspotted doves," according to their own testimony. By Tuesday evening they had navigated as far as London and by some strange fatality had immediately steered a course landing them on the pavements adjacent to the Alhambra Hall. This, of course, may have been the result of mere chance, though there may be those who will accept this solution with a large mental reservation. Under the beguiling of two fair nymphs all the good resolutions, like soap-bubbles, went up and dissipated into thin air.

On their return to the hotel, late at night, they discussed the mutability of things and

their fall from grace. At this point of the proceedings my friend's companion must have experienced a wavering in his sense of confidence in the aforesaid nymphs. At any rate he pondered a moment and then hastily remarked: "Say, F., it might not be a bad idea to use that stuff in the bottle." F., too, must have had a revulsion in his childlike innocent belief in humanity in general, and certain specimens in particular, for without further argument he endorsed the advisability of the measure, and being a gentleman noted for his courtesy told W. to go ahead and take the first shot, while he looked over the bill of proceedings for the next day as set forth in the pocket note book.

Now in the day when mythology constituted the religion of the Roman and Greek world we are told that the worship of Priapus and Venus was conducted in gardens surrounding their temples; that to the strain of music and carrying garlands of flowers the worshippers engaged in singing and dancing, though we are not informed as to the exact name of this dance. After the decline of mythology we hear nothing through the intervening centuries of any terpsichorean observance particularly directed to celebrations of venery until we come down to times fairly modern, where we learn that the practice seems to have undergone a revival, its occurrence taking place frequently in the private consulting rooms of doctors, singing of a kind accompanying the dance, which without modern penchant for accurately naming things, is known as the "nitrate of silver quickstep," the instruments provided in the orchestra for the movements of the steps being acid nitrate of mercury, caustic potassa, etc. The bearing of this historical side light on the present story appears later.

While F. on the bed quietly posted himself from the book, W. reached into the grip, drew forth the saturated solution of protargol, persuasively introduced the nozzle of a syringe, drew-up the piston, and backed into a convenient corner, stripped for action, and then—from all accounts—Hades broke loose. An exposition of the quickstep followed which is said to have contained more original steps and variations than a camera could have captured. As a running accompaniment "cuss" words of the choicest brands, observations that the remedy was worse than the disease, that a beastly practical joke had been perpetrated upon them, beat upon the air, while the erratic course of a syr-

inge through the atmosphere gave a vivid idea of the Langley apparatus antics in its trials on the banks of the Potomac. In the midst of this scene F. casually happened to pick up the note of instructions as to the proper dilution, etc. Its reading resulted in explosions of laughter on his part, while with maledictions the victim howled his resentment at this display of hilarity. F.'s reply was to read the note, and to offer the consolation that though an error had been made he at least felt sure that no incipient gonorrhea could survive that night, and it evidently didn't, though for a few days W. was not absolutely comfortable. Nothing of any moment followed, W. probably not injecting but a portion of the solution before he thought it time to stop.

In sending me an account of the matter I was warned that they had solemnly compacted never to reveal the story, but after their return both concluded the joke was too good to keep, and so it gradually leaked out.

Both before and since the above incident I have used protargol, but never with the same end in view. I have employed it in conjunctival troubles, in inflammations in and about the throat where formerly other silver salts were used, for touching small ulcers in the mouth, and in solution as an injection for the cure of gonorrhea; in combination with it a 1-1000 solution of adrenalin, each being used separately but consecutively, acts well in most all of these conditions.

In this connection there are two points which may or may not be of interest. We hear much in this day of urethral irrigation and of the failure of injections to produce good results when self-administered. We know that irrigations given by a skilled hand will probably give better and quicker results than simple injections; but the average patient cannot or will not spare the time to afford the surgeon proper opportunity to irrigate him, and often, too, the financial status of the patient is not such that he can enjoy any of the luxuries of treatment. My own impression is that many of the failures charged to injections or to the value of certain drugs is traceable clearly to the fact that the patient is not properly instructed as to how an injection should be administered. Personally, after strongly warning the individual as to the danger of conveying the disease to the eyes by reason of not thoroughly washing the hands and nails after even touching the cloth-

ing in the neighborhood of the genitals, I instruct him never to take an injection, if possible, while standing. Many a man, particularly if naturally of a high nervous organization, will faint upon the administration of a urethral injection thus administered. Preferably, I direct the patient to take his irrigation recumbent; if this cannot conveniently be accomplished then I instruct him to sit well on the edge of a chair, allowing the trunk of the body to rest against the back of the chair low down. In this position the coccyx rests upon the edge of the seat, while the perineal portion of the urethra is thrown so far forward that all compression is taken off of it. After having washed out the urethra with warm water, half a dozen times, if possible, so that the medicament has a chance to act upon the diseased portion and not merely upon a pus coating, the medicated solution is employed, the piston being forced home slowly, for if too rapidly thrown in more is regurgitated than remains. Then the syringe being withdrawn he is told to lightly, but firmly, grasp the meatus and with the right hand fingers to massage the canal clean back to the anus, so that, as far as possible, the solution shall be worked into the sulci; he continues this for five or more minutes, then he makes his usual toilet, including the suspending of the testicles. While there is nothing new in all this, yet I know by years of experience that but few are, at least in the first instance, adepts with the syringe and I feel confident that if practitioners thus coached patients, better results would follow, and comparative values of various drugs in the treatment of this disease be more justly ascertained. The best sword in the hands of one totally ignorant of its use is of but small account, and I fancy the same may apply in the question under discussion.

The other point to which I should like to refer is this, and having been tripped on it myself, I realize that others may fall into the same error: Some five years ago a gentleman came to consult me in regard to what had all the appearances of a fully developed gonorrhœa; every evidence seemed to confirm our mutual conclusion. At the end of a week's treatment affairs were not in the slightest improved. He then told me that some years previously he had had such another attack, and that after a regulation course of copaiba, etc., no good followed. He then made a change in medical advisers. The new consultant having been told of the previous treatment and its failure, was perhaps a little

more wary than his predecessor and went more into questions and details. Learning thus that the patient came of a highly rheumatic ancestry, and had suffered at times with twinges of rheumatism, the conclusion was arrived at that possibly the solution of the question was at hand. Under antirheumatic medication improvement and cure rapidly followed without subsequent gleet. Learning this, I followed a similar course, and, presto, in three days that penis, without local treatment of any kind, was as dry as the Sahara. In each of these attacks an eruption, closely resembling in color and appearance the rose spots of typhoid fever, surrounded the elbow and knee-joints for a distance of about three inches; no pain or itching accompanying it. This disappeared synchronously with the discharge from the penis.

Until about two months since I never came in contact with a similar case; then I was consulted by a young man, a boss dyer, who frankly told me that he had, about nine days before, been mixing the breezes of Atlantic City and the charms of a Delilah resident there, followed by the usual story that he didn't think it possible for the gentle creature to have been responsible, for he was almost sure that he was the only favored one (happy believer, he only saw her once a week, being in this city except Sunday, and originally he only met her by chance). However, in the outcome of the story possibly his belief may be justified. While he improved slightly under treatment yet matters seemed to hang fire. Recalling my old case I questioned him, and learned that he also was of a rheumatic race, and further that he had had no twinges since the starting of the discharge. Changing his medication accordingly we were both pleased to say adieu in a short time to his trouble.

From a medico-legal point of view the remembrance of these cases might be of vast importance. It can be readily seen that family dismemberment could be caused or prevented by a diagnosis wrongly or rightly made. True, we may say, that the microscope or other tests might establish a diagnosis, but we will all admit that but few of us ever submit seemingly self-evident diseases to such arbiters. I have spoken of these cases solely for the reason that I thought they might perhaps be of interest to some who had never come in contact with this particular combination of events and yet who might some day awake to the realization that they had a rheumatic penis to deal with.

SOME CLINICAL OBSERVATIONS ON THE PROPHYLAXIS TREATMENT OF URIC ACID CONDITIONS.*

By J. C. WALKER, M. D., Danville, Va.

The importance of promptly recognizing the immediate and remote effects of the baneful influence of uric acid excess on the blood and tissues of the organisms, and the good results from the proper management of such conditions contrasted with the unsatisfactory results frequently found in their treatment, is my apology for addressing you upon this well-worn and hackneyed subject.

How much of function and of life might be restored and maintained by the intelligent management of such conditions! How much suffering, heart disease, chronic nephritis, arterio-sclerosis and many other similar conditions averted by neutralizing the effects of this irritant upon the tissues! Statistics show that about one-third of all cases of heart disease are due to rheumatism. I believe that a great many cases of chronic nephritis, and my experience corroborates it, are undoubtedly due to the irritating effects of the uric acid upon the uriniferous tubules.

I have no new theories to exploit, but having had rather unusual facilities and considerable experience along these lines in sanatorium work, where the patients were kept under close observation and were enabled to get the benefit of modern methods of treatment, especially as regards diet, regime, etc., I will as briefly as possible give the line of treatment found most satisfactory in such conditions and can command the same.

The cases treated included many of gout, rheumatism, myalgia, sciaticas, lumbago, neuralgia, chronic nephritis, arterio-sclerosis and gastro-intestinal troubles. A careful urinary analysis was made in nearly all the cases and almost invariably a large excess of uric acid was found, which gradually subsided and approached the normal as the disease yielded to treatment.

A noticeable fact was that the more chronic the conditions the less amenable it was to anything like drug medication, and the nearer we approached the line of physiotherapy, or nature's own methods, the more satisfactory were

our results—including such measures as diet, exercise, clothing, water drinking, bathing, hot air, electricity, massage, etc.

Diet is of vital importance. No matter how thorough and complete elimination may be, you have got to limit the uric acid in-take while trying to increase the output to the utmost. Avoid red meats, pork and beef, tea, coffee, cocoa, tomatoes, rhubarb and an excess of sweets and starches. Allow fruits, vegetables, mutton, fowl, fish, oysters, cheese, butter and milk. Whether teas and coffees, according to Haig, contain large quantities of uric acid or their equivalent lanthan compounds, I am not prepared to say; but I believe that they are especially unsuited for rheumatism. One case I recall was that of a patient who after returning from treatment at Hot Springs, Ark., with his rheumatism persisting notwithstanding a rigid diet otherwise, with the single exception of his coffee, after stopping the coffee the disease promptly subsided. I have been impressed with this fact sufficiently often in other cases to convince me of the bad effects of coffee, tea, and chocolate under such conditions.

Exercise, especially in the open air. Human beings, like plants, require an abundance of fresh air and sunshine. Keep the skin, bowels, kidneys and all of the eliminating organs at work. Lack of exercise, over-eating, drinking too small quantities of water, and the consequent retention of toxic substances in the blood; non-elimination, auto-intoxications are most potent causes of disease. Get a hump on yourself; step lively and sweat a little and keep your sewers open. There is one thing a chronic rheumatic should never do—i. e., give up; let him keep going. The worst case of arthritis deformans I ever saw, with ankylosed joints, bad heart, pronounced hopeless by the best physicians, gets for a time relief from his pain with hot air, and keeps on the road constantly, and says that the only thing that has kept him alive is his full determination not to give up the ship.

In regard to *auto-intoxications*. In a recent conversation with a noted New York surgeon, celebrated for his hard horse sense, he remarked that the most valuable lesson of a busy life was the importance of recognizing auto-intoxications, especially of the gastro-intestinal tract, as the majority of mankind are poisoned by their own toxins.

Clothing.—These patients are very susceptible to sudden temperature changes, and should

*Read before the Tri-State Medical Association of Virginia and the Carolinas during its session at Danville, Va., February 23-24, 1904.

wear flannels the year round—light woollens, of course, for warm weather, as the heavy ones are too depressing.

Water Drinking.—It is surprising how few people drink enough water. Water is the natural sewer of the body, the great solvent and eliminator, flushing out all the channels of the body, eliminating and dissolving the toxins, keeping the secretions going and promoting a general feeling of well-being. Drink from one to four quarts daily. Don't drink much during or immediately after meals, as it interferes with digestion by diluting the gastric juice. Always drink pure water, preferably a good alkaline mineral water, containing a good per cent. of potash and soda, as such is among the best of acid solvents.

Bathing.—The skin is by far the best channel for the elimination of uric acid and other noxious products; they can be more rapidly and safely eliminated this way than any other. The skin is rather a lazy, sluggish organ; the pores are easily clogged up, and it frequently requires a lot of stimulation by friction, heat, etc., whipping up, you might say, before it can be made to do its duty and perform its functions. One of the worst cases of gout I ever tackled was a man of 30; it came on in infancy. He had been to Hot Springs, Ark., three times, with little benefit. At the beginning of treatment it required 40 minutes in a hot air cabinet at a temperature of 165° to produce a good sweat; later as improvement progressed, the perspiration came on in a shorter time, and finally in 20 minutes, and as the action of the skin approached the normal, the disease subsided and convalescence was rapid. In private practice hot baths are most convenient, but in institution work the Baruch tonic bath is far ahead of any system of baths known to the medical profession. By means of the hot air cabinets we can regulate the perspiration and get all of the elimination needed, and this can be followed by a system of graduated douches, which tone up the nervous and vascular systems, acting as a powerful reconstructive and tonic, and prevent the taking of colds—that bugbear of that abomination, the Turkish and Russian bath.

Dry hot, or superheated air is one of the most rapid eliminators of toxins known—so much so that Hare in his *System of Therapeutics* states that there is sometimes danger of lighting up an acute exacerbation of gout or rheumatism from too suddenly throwing into

the circulation large quantities of uric acid. This method of treatment is admirably adapted to all painful and inflammatory conditions, especially sprains, luxations, chronic and sub-acute articular rheumatism, synovitis, ankylosis, adhesions, exudations, deposits, etc. It is astonishing how old adhesions, unless organic in nature, can be dissolved and broken up, especially when followed by judicious massage.

Electricity, especially static.—I know of no agent as effective for the relief of all painful conditions, whether of joints, nerves or muscles, and as a general all-round tonic, sedative invigorator as static electricity. It is simply invaluable. Old sciaticas, lumbagos, the pains of locomotor ataxia, and general neuralgic conditions frequently yield to static electricity after all other known measures have failed. As a sedative, as a hypnotic, and in all neurasthenic conditions, it is unrivalled. Finally, an invaluable adjunct to all these is a good masseur. A good one is hard to find, but they are simply indispensable.

The short time at my disposal does not allow me to do even approximate justice to this important subject, and the most I could hope for is to call your attention briefly to a few of the important landmarks in the prophylaxis and treatment of such conditions.

A BRIEF REPORT OF CASES.

Mr. H., age 30, *inveterate case of sciatica* of right side of over a year's duration, complicated with sub-acute articular rheumatism of the left knee joint. Usual treatment, Baruch baths, electricity, etc. Case very rebellious, and only finally yielded to bombardment of the nerve with heavy static sparks daily. Dismissed case cured after four weeks' treatment. This case strikingly illustrates the value of electricity.

Mr. W., a prominent attorney, ill more than a year. Case pronounced *rheumatoid arthritis*, and prognosis hopeless. Had spent some time in hospitals in Hot Springs, Va., and exhausted all of the usual orthodox treatments with no benefit. General condition very bad; required large doses of opiates at night and rested very badly. Both shoulder joints very stiff and painful; could not use arms or hands. After trying the usual treatments with no benefit whatever, as a dernier resort, I put him upon hot air and massage, using the hot air for one hour daily, followed by thorough massage, with gradual relief and complete recovery in a few weeks. Has remained so. This case strikingly shows the

benefit of hot air and massage, and I don't believe anything else would have cured him.

Young man was affected with attacks of *rheumatic gout* from infancy. Had been to Hot Springs, Ark., three times. Disease confined to the feet and knees. Baruch baths and electricity effected a cure in a few weeks. Relief from the baths in this case was striking.

In another case, skiagraphs showed a calculus in each ureter. Patient suffered considerably with pains over the kidneys and ureter. Two weeks' treatment with Baruch baths and static electricity entirely relieved pain and apparently produced a cure. Patient left suddenly and unfortunately. I was unable to get another picture. He was well when heard from several weeks later.

Typhoid Gangrene of the Lower Extremities— 134 Cases of Spontaneous and Surgical Amputations—An Historical Resume.*

By B. MERRILL RICKETTS, Ph. B., M. D.,
Cincinnati, Ohio.

Spontaneous amputation as the result of typhoid gangrene of the lower extremities should not be encouraged. However, in a few cases in the aged, where both extremities are involved with dry gangrene, slow in its development, with great debility, and where any kind of surgical anesthesia is contra-indicated, the question should be carefully considered. But if the line of demarcation be established, and amputation could be done rapidly above the knee or ankle without surgical anesthesia, then spontaneous amputation should not be considered.

Surgical amputation should be made as soon as gangrene is discovered, and far enough above the diseased tissues, to be reasonably sure that nothing but healthy tissues, and especially healthy blood vessels, are divided. If the lower leg be involved, amputation should be above the knee joint (lower third of thigh), as in such cases the occlusion is almost invariably in the popliteal artery.

Mortality in both spontaneous and surgical amputation is higher in subjects over 40 years of age and when amputation is delayed.

*Read before the Medical Society of Virginia during its thirty-fourth annual session, held at Roanoke, Va., September 15-17, 1903.

If there is great debility and surgical anesthesia is contra-indicated (which is seldom found), a rapid primary amputation should be made through the gangrenous tissues. The secondary amputation can then be made subsequently, so that the work may be completed in two sittings.

There are probably but few cases in which this course is necessary, or is to be advised.

There are a few cases in which the gangrene will continue—even after the amputation is made in normal tissue.

The more favorable cases for amputation are those involving the toes, foot and lower leg, during convalescence. This is so for amputation of the lower extremities for any purpose—the mortality increasing as the upper thigh is approached.

There are comparatively few cases of gangrene of any locality associated with typhoid. The disease occasionally attacks the lips, tongue, cheeks and genitalia. It has also been observed involving the fingers, hands, arms, toes, feet and legs, which will be considered at this time.

Gangrene of the lower extremities associated with typhoid is indeed rare compared with the great number of cases of typhoid fever throughout the world. There is no known cause. Climate, habits, occupation and general environments do not offer any solution whatever of the problem. It appears to be due to the bacillus typhosus, but this has not been proven.

The present study is based on a study of 134 reported cases. That many more cases have been recorded, there can be no doubt.

Of the 134 cases studied, 100 were in males; 34 females. One hundred and twenty-eight surgical amputations; 3 spontaneous; 3 unknown. There were 65 recoveries after operations; 1 recovery with no operation. There were 22 deaths after operation; 34 deaths without operation; 12 unknown. There were 15 amputations of both legs; 41 of right leg; 20 of left leg; 16 of both feet; 18 of right foot; 16 of left foot; 6 toes; 1 of hand; 3 of middle third of thigh; 3 of upper third of thigh, and 2 of lower third of thigh. There were 20 cases recorded as *dry* gangrene, and 2 as *moist* gangrene; other cases not stated.

Pathology.—Gangrene of any part associated with typhoid is due to embolism, thrombosis, or inflammation of the veins or arteries or both—more frequently of the arteries. It is due to a plug, inflammation, anomalies, and ob-

struction to collateral circulation; and may appear at the crisis of the disease, or at any time during the progress of the fever, or convalescence from the same.

When due to inflammation, the process, as a rule, extends until all the vessels of the extremities are involved. In cases of embolism or thrombosis, the process is more localized, with partial or complete destruction of the tissues beyond the occlusion, which may be at any point in the course of the vessel. The gangrene may involve a part or all of the circumference of the leg—usually a part when there is thrombo-phlebitis. When both the veins and arteries are involved, or the arteries alone, the entire circumference is involved. There may or may not be tenderness along the course of the vessel. This is more frequently so if the vein be involved. Or the gangrene may be confined to the course of the artery involved, with severe hyperæsthesia.

Occlusion of vessel or vessels may be partial or complete. One or both external iliac arteries or veins or all may be embolic—partial or complete; and partial paralysis may follow without any atrophy.

Gangrene of the feet and legs, when double, may be simultaneous, or there may be an interval of days or weeks between involvement of the two.

Fever may be high or low, or there may be none at all.

Gangrene may be moist or dry; slow or rapid in its progress.

Metastatic abscesses may form in the kidneys, liver, lungs, spleen, pancreas, heart or brain; and there may be spontaneous fracture of the long bones.

In connection with the cases studied on which this paper is based, my *personal experience* may be recorded:

I was called in consultation by Dr. Loomis, Independence, Ky., January, 1902, to see a married woman, age 22 years, mother of two or three children, who was at about her thirtieth day of typhoid fever. The right leg was gangrenous to the middle third—moist gangrene having first appeared in the toes of that limb eight or ten days previous to my visit. Temperature was not unusual, and with the exception of an endocarditis she was rather comfortable than otherwise.

Amputation at the upper third of the thigh was decided on, and was done immediately,

under the influence of chloroform. Time required for amputation one minute and a half.

The femoral vessels were occluded at the point of the first incision, but the femoral artery was opened with the swipe of the scissors, and ligated. The soft tissues were wrapped with silk-gut, and drainage provided for with gauze. The shock was but slight, and of but little consequence. She rallied nicely, and did very well for seven or eight days, when she began to decline, and dissolution took place on the tenth day.

Such cases are rare, and this one is reported because of this rarity, and should be mentioned in considering other cases of amputations of the lower extremities for gangrene resulting from occlusion of the vessels during the progress of typhoid infection.

This is the only recorded case where amputation was made at the upper third of the thigh for the condition described; and as death ensued ten days afterwards, the lesson to be learned is that such an amputation can, of itself, be made under such circumstances without fatality; for, if death had resulted from the operation in this case, it would have occurred within a few hours. The gangrene continued to extend after the operation, and death was, no doubt, due to the infection resulting from the gangrene.

In two cases recorded in which recovery took place, amputation was made of one leg and one thigh each. In two others, both legs were amputated with recovery.

It is reasonable to presume that the same rule holds good with amputation of the thigh for typhoid gangrene as for other causes.

The questions to be decided are:

1. Should surgical amputations be resorted to in cases of gangrene of the lower extremities during an attack of typhoid fever?

2. Should not the line of demarcation be allowed to form before surgical measures are adopted, or, at least, until the patient's physical condition improves?

DISCUSSION.

Dr. Estelle H. Henderson, Newbern, Va.: I saw a case some time ago of gangrene due to an embolism in the popliteal artery following an attack of typhoid fever which bears on the subject of Dr. Rickett's paper. The line of demarcation was complete, and sloughing had begun. The gangrene tissue was easily separated, and the bones were sawed in two without the use of an anæsthetic, which was contra-in-

licated on account of the extreme weakness of the patient—a negro—but he made a rapid recovery.

During August, 1903, I had a case of noma, or gangrenous vulvitis, in a girl thirteen years of age. This condition also developed during an attack of typhoid fever. In this case, the gangrenous portions were destroyed with nitric acid. Recovery was slow but complete in about five weeks.

EARLY OPERATION FOR APPENDICITIS FROM A PATHOLOGICAL STANDPOINT VERIFIED.*

By J. G. CARPENTER, M. D., Stanford, Ky.

"I shall pass this way but once: Therefore, if there be any good thing I can do, let me do it now; for I shall not pass this way again."

During October, 1889, the essayist did his first operation for appendicitis, and reported the case to Central Kentucky Medical Society. The operation was done at night in a log cabin, a pine knot fire used for illumination, the surgeon being assisted by the patient's father and uncle in the operation. Chloroform was the anesthetic used. Patient made a prompt and successful recovery.

At divers times since 1889, the author has presented papers on appendicitis, and a number of successful abdominal sections—life saving operations for appendicitis with the pathologic specimens—and has also presented a few abdominal sections; also eleventh and twelfth hour surgery for appendicitis, in which the surgeon was not called in time, the physician being uncertain of his diagnosis; or if he made a diagnosis in time, he let the golden opportunity slip by, for early, skillful, successful, life-saving abdominal and pelvic surgery; or the medical attendant had dilly dallied, procrastinated—hoping to himself that to-morrow would bring a better fate for his patient and that the "*vis medicatrix naturæ*" would arrest the disease and save his patient, saying to himself as to the urgent necessity and advisability of calling a surgeon "You may and you may not; you can and you cannot; you will and you won't; you shall and you shan't," etc.

To-day, if the physician does not call the surgeon early, the medical attendant and patient are carrying burdens greater than they should bear, even if the patient does not die; for the latter is only symptomatically cured, temporarily relieved, but not cured. And if the patient dies, the medical attendant has to bear the name of ignoramus and blunderer, or murderer, given to him by the family and immediate friends.

The physician should call the surgeon early, and in a friendly and kindly manner as a very pleasant help and burden bearer in the time of trouble. When the appendicial disease is present or about to destroy the life of the patient, the physician and surgeon should treat the patient together in an honorable, upright and skillful way—not vieing with each other as to who shall get the most reputation and money out of the case, but working for the purpose of saving life—making joy and happiness in the patient's home, both being "life-savers."

In 1889, when the writer appeared before the Central Kentucky Medical Society with his successful and first abdominal section for appendicitis in which the patient had made a complete recovery, the majority of the members did not approve of early, quick, skillful surgery; but said the essayist was too eager to operate, and that the majority of cases did not need surgery; that the essayist should go slow, and listen to the experience and wisdom of his seniors who treated appendicitis with rest, morphine, opium and poultices. But the essayist has lived to see these same physicians stay in the ruts, and their minds clouded with ignorance and stupidity concerning appendicitis, while skillful surgeons have reduced the mortality of appendicitis from 68 to 1, one-half or seven-tenths per cent. All praise to the intelligent bold, progressive and aggressive, skillful surgeons in abdominal and pelvic surgery! We believe they will have the highest seat in heaven, and the greatest praise and admiration on earth for they live *pro bono publico*.

Again in 1889 when the essayist advocated at Danville, Ky., the "backwoods" of Kentucky, the home of abdominal surgery—that the early diagnosis of appendicitis, the early preparation of patient, the early operation, short anesthesia, quick, skillful surgery—which means the saving of a life, removal of dangers that daily menace health, happiness and life, a minimum of shock, complete hemostasis, and one or two per cent. mortality—his professional

*Presented to the Kentucky State Medical Association, 1903, at Louisville, Ky.

confreres thought these deductions were a surgical dream or phantasm; they then laughed at me, now I laugh at them; and he who laughs last laughs best.

We are proud that Boyle, Lincoln, Mercer and Garrard counties, also the adjoining counties are the home of abdominal surgery, but it is only within the last decade that the mortality in ovariectomy has been made less than McDowell's—his about 11 per cent; twentieth century per cent. in ovariectomy is $\frac{1}{2}$ or 1 per cent. mortality. It should be a stigma upon us as individual physicians and surgeons to do eleventh and twelfth hour surgery—antemortem surgery; yet now and then, a life is saved, even at this late period skillful surgery.

It should be the exception—not the rule—for patients to die with appendicitis or any other abdominal lesion that demands surgical treatment; yet we hear and read of deaths from appendicitis. There were 4,700 deaths in the United States in 1902 from appendicitis which is a stigma upon our noble profession. And the laity meet the doctors and exclaim: "Why don't the doctors learn to save somebody, and not let the people die with appendicitis?" The average doctor, the nineteenth century fellows, say, "Well, the physicians cure about half of the appendicial cases with rest, poultices, morphine, diet and purgation, and the surgeons kill the other half." Both of these assertions from the nineteenth century doctors, the "old moss-backs," are untrue. The early diagnosis, the early preparation of the patient, the early operation in skillful hands, saves all, or nearly all of the cases of appendicitis.

Dr. Nicholas Senn states: "1st. All cases of catarrhal appendicitis should be treated by laparotomy and excision of the appendix, as soon as the lesion can be recognized. 2nd. Excision of the appendix in cases of simple uncomplicated appendicitis, is one of the easiest and safest of all intra-abdominal operations. 3rd. Excision of the appendix in cases of appendicitis before perforation has occurred, is both a curative and prophylactic measure. 4th. The most constant and reliable symptoms indicating the existence of appendicitis, are recurring pains and circumscribed tenderness in the region of the appendix."

The great Dr. John B. Deaver states, "The most constant and persistent diagnostic symptoms are pain, tenderness, rigidity of the right abdominal wall, and especially over the appen-

dicial region; but the intensity of pain, tenderness and rigidity may be north, east, south or west of the appendix, per se." Patient may have, too frequently does have, *appendicular nausea*, *appendicular dyspepsia*, *appendicular colic*, *appendicular neuralgia*, *appendicular hyperæsthesia* with a furred tongue, with or without constipation or diarrhœa.

Too often the patient is anæmic or neurasthenic, appetite capricious for a long time before the acute or sub-acute attack, or the incipient lesion of the appendicial mucosa may have been chronic at first and the "appendicitis fulminans" is only the acute violent inflammation of an acute attack on the chronic or recurrent form of the disease with an endo-appendicitis plus an interstitial appendicitis, with an extra-appendicitis complicated with a peri-appendicitis and peritonitis with abscess, perforation, gangrenous appendix, septic peritonitis and death; and professional humiliation and stigma to the medical attendant or surgical tyro who ignorantly or wilfully lets a patient die from neglected surgery. Professor Senn states in substance in his book on "Intestinal Surgery" that every county seat or town of one thousand or more population should have a surgeon prepared and equipped to do the operations of abdominal surgery. Again, he has stated, you must be careful or you will have every cross-roads doctor doing an operation for appendicitis. The warning has been timely but not heeded. You cannot wait for the far away city surgeon to come and operate, but the wide-awake, equipped, thoroughly prepared country surgeons of small or large towns, who have served an apprenticeship in abdominal surgery under the great surgical lights of our profession—the Prices, Senn, Deaver, LaPlace, Oschner, Wyeth, McBurney, Ashton, Morris, and others too numerous to mention—should be called on.

The ignorant medical pretender, the surgical tyro—and there are many of them, whom the good Lord never foreknew, never forecalled, and never fore-ordained or predestined to be able, skillful practitioners and surgeons—may try to do surgery for self aggrandizement and fees, etc., and not for the welfare of humanity. We should constantly remember that our aim is to make an early diagnosis, early preparation of the patient, and do a quick, skillful aseptic early operation for appendicitis, with short anæsthesia, minimum of shock, have a short, rapid

recovery of patient, with only 7-tenths per cent. mortality; do life-saving, not ideal, surgery, for ideal surgery is only done in the dead house, and on the lower animals.

Again, it is not necessary to have high pulse, medium or high temperature, or a chill or rigors followed by high pulse, temperature and rapid breathing. We have seen patients walk into the hospital with normal or sub-normal pulse, temperature and respiration, and have an encysted, abscessed, perforated or gangrenous appendix, with the absence of active constitutional symptoms, but localized pain, tenderness, and rigidity were present; and it is along this negative role of constitutional symptoms that the medical attendant fails to make the diagnosis of appendicitis.

Never forget the three cardinal points in diagnosis: viz. pain, tenderness, muscular abdominal rigidity, either with or without active constitutional symptoms. These three cardinal points may be low down in the pelvis, beyond the left mesian line, over the liver, post cæcal, in the loins, over left colon or signoid. About one case in 2000 is supposed to be cured by complete obliteration of the appendix—degeneration into a fibrous cord. But, no wise practitioner or surgeon will wait for such a consummation, but will be up and doing, pursuing the diseased appendix, achieving success and saving life.

And Moses said unto the people., (Israelites) "Fear ye not, stand still and see the salvation of the Lord, which he will show to you to-day. And the Lord said unto Moses, Speak unto the children of Israel that they go forward." To-day the surgeons can truthfully say to the physicians, "stand still and see the great salvation the surgeons have wrought in appendicitis, by early diagnosis, early preparation, and early operation." Operate as soon as the diagnosis is made, or during the first 24 or 48 hours or intervals between attacks if possible. Two or three days' delay makes the operation much more dangerous to life, the mortality very high, 50 to 70 per cent. Again the surgeons say to the general practitioners, "Go forward," quit your envy, bickering, back-biting, jealousies, selfishness, and take a post graduate course. Study, work and learn all about the anatomy of the appendix, its pathology, and the diagnosis and early operation for appendicitis. Go forward into the enlightened domains of anatomy, pathology and surgery. See, hear, think, work

and learn the better way, the surgical way, and help save life, and the children of Israel shall go on dry ground through the midst of the sea, and be saved. And the surgeons by early diagnosis, and early operation for appendicitis, shall go into the midst of the abdomen on dry ground, in a healthy, dry peritoneum, remove the diseased appendix, and the patient shall live, and not be drowned in septic pus.

Early appendectomy is a curative and prophylactic measure, brings salvation to the patient and his household, and life, happiness and peace shall reign supreme, with much reputation and gold for skillful diagnosticians and the surgeons. Then surgeons will not be forced to wade through puddles of pus and peritoneal debris. Dilly-dallying practitioners in their ignorance of pathology and early diagnosis, by their delay invite and create this puddle of pathological pus. Then it becomes difficult for the surgeon to save life. At this time the surgeon cannot get out of the abdomen dry shod, on account of the perforation, abscesses, gangrene, and belly full of septic pus and peritonitis; but as a life saver he must do the best he can to save a life; for now in the abdomen it is not a local disease—appendicitis per se, but the latter plus a worse foe to fight; viz. a perforated appendix, encysted abscess, a gangrenous appendix, and septic peritonitis, a constitutional poisoning—a horrible disease.

These awful latter foes, death and the undertaker, must and will remind and haunt the medical attendant and the tyro surgeon of the awful doom brought upon himself, patient and family, by the neglect of early life-saving surgery. Appendicitis is at first a local disease—a surgical disease, and demands early diagnosis and surgical treatment.

All surgeons agree with Dr. Ernest LaPlace that there is a time, or was a time in the life of the patient, when life could have been saved by surgery. A critical review of 416 cases of appendicitis operated upon in the German Hospital, Philadelphia, is given in *Journal Amer. Med. Ass.*, Dec. 13, 1903, by Dr. Deaver. There were 137 chronic cases, with one death from acute intestinal obstruction, 7-10 per cent. mortality; tumor—a mass in the right iliac fossa was demonstrated clinically 104 times; septic pus infection with abscess formation encountered in 174 cases; adhesions, these were encountered in 189 instances; 155 adults; 34 children; necrosis, 145 cases; perforations, 84

cases; peritonitis, local: adults, 104 cases; children, 4 cases; total, 109. General peritonitis—adults, 25; children, 23; total, 48 cases. In eleven adults the general infection was purulent, and all of these died.

In 154 cases, drainage was used, gauze wicks, glass tubes and rubber tubes being the three methods employed. The appendix was removed in 269 cases; not removed in 7, and had sloughed off from the cæcum in 3. Fecal fistula in 11 cases.

The complications were general peritonitis, involvement of the omentum with abscess; abscess of the mesentery, and inflammation of the lymphatics of the mesentery glands followed by abscess, abscess between the coils of the small bowel, pyæmia of the portal system, the result of phlebitis of the veins of the meso-appendix with or without metastatic liver abscess, gangrene of cecum, colon and small bowel; abscess of liver from contiguity of stricture; septic nephritis; septic meningitis; and phlebitis of the lower extremity, particularly the left, but sometimes both. These statistics and results of Dr. Deaver are like a landslide—overwhelming in argument, and should convince any medical or surgically doubting Thomas that the early diagnosis and early operation in skillful hands within the first 36 hours from inception of appendicitis saves nearly all the cases, aborts the appendicitis, and is prophylactic and curative against future attacks; and prevents the deadly peritonitis.

Surgeons have proven that the early operation is the radical cure for acute appendicitis. People are being converted to the early operation for appendicitis; it is high time the medical practitioners were learning early diagnosis and appendiceal pathology, and also learning that it is the early operation that saves about all the cases of acute appendicitis.

Who can fortetell the course the mildest case of appendicitis will take? By the early operation, even in acute cases, it can and should take but one course, and that is out of the belly by the surgeon's knife, when appendicitis is a local disease with no complications or sequellæ. "Early operation means cure," (Deaver). It is better to take out an occasional healthy appendix, (if there be any), and save all lives, than to leave a diseased one that will cost a life. Dr. Robert Abbe, of New York, states, "An appendix once diseased, is always diseased." The essential thing to know is that when the patient

has his first attack of appendicitis, the disease is nearing its end, and you can easily tell your patient that he has had the trouble from 1 to 25 years. I repeat that "the appendix once diseased is always diseased."

The idea of removing the appendix every time you have the abdomen opened as first suggested by Edebohls is a good one. Dr. R. C. Gibbons says take it out and give it to the medical practitioners to study anatomy and pathology—a grand object lesson. Dr. Ernest LaPlace states, "It follows that appendicitis is of all diseases the most anomalous. Unlike most diseases however, there is a positive and abortive treatment. By abortive treatment is meant such as will destroy an affection at its inception—not when the disease has run its course almost to a fatal termination. An early and clean extirpation of the appendix, as soon as possible after the diagnosis made, is the only positive and safe abortion of this disease of which no man knows the course it intends to run in a given case. Appendicitis is absolutely a surgical disease"—primarily a local disease.

McBurney's mortality in appendicitis surgical treatment, is 1 or 2 per cent. Oschner's mortality is 3 per cent. Deaver's mortality, chronic cases, 7-10 per cent. Deaver's mortality, all forms in acute cases, 11 per cent. Joe Price's 110 acute and chronic consecutive cases, no deaths. Mordica Price's 135 pus cases, of appendicitis, 5 deaths, 3 and 7-10 per cent. mortality. Remember, appendicitis is a surgical disease, and requires surgical treatment, early operation first, 36 hours from inception of the disease.

It was Pat's first visit to London. He was amazed to see such large shops, until he came to a lawyer's office. Seeing nothing in the window, he thought he would go inside. When he got inside he saw two clerks, so he asked them what they sold. The clerks, thinking to take the rise out of him, said:

"Fools!"

"And you must have a very fine sale for them," said Pat, "seeing that you have only two left!"

TURPENTINE IN SURGERY.

By W. K. GATEWOOD, M. D., West Point, Va.

Having on two occasions recently to resort to an old remedy that has always given good results, I wish to call the attention of the young doctors to its great value. I speak of *oleum terebinthinæ*.

On the 15th of January, 1904, I was called to see a negro boy 18 years old, who had gotten all five of his toes cut off by a saw just at the junction of the foot. I found the foot dreadfully torn and lacerated and very filthy. They were very poor and filthy negroes, and I could get no water boiled, as the old stove was so worn out it would take more time than I could spare, as night was coming on, so I washed off what I could with the water at hand, put him on a filthy old table in front of a door, as the house had no windows, and got my friend, Dr. Nunn, to administer the chloroform. Having a bottle of turpentine in my satchel, I used it to cleanse the foot—using gauze saturated with it to scrub with, and succeeded in getting it in very nice order. After I had amputated the foot, I poured turpentine all over the stump, then wiped it off with gauze. I then dusted it with Mulford's bismuth formic iodide powder and bandaged it up. I dressed the foot five times, and to-day discharged him well, as nice a stump as you ever saw, and not one drop of pus have I seen during the healing, which was by first intention. I only write this to show the great value of turpentine as an antiseptic and healing remedy. I have in a practice of forty-six years had dozens of like results from this great remedy, which has never disappointed me.

Judge: You say you got that black eye as the result of a blow by the defendant?

Prosecuting Witness: Yes, sir.

Judge: Tell me the circumstances under which he struck you.

Prosecuting Witness: This man met me as I was coming along Calvert street whistling "Hiawatha," and—

Judge: That'll do. The prisoner is dismissed.—*Baltimore American*.

Proceedings of Societies, Etc.

Norfolk, Va., Medical Society on Contract Practice.

The committee appointed by the Norfolk Medical Society to analyze contract practice and to make suggestions regarding the same, made the following report, which was unanimously adopted by the Society:

1. *Individual or Family Contracts*.—Yearly or monthly contracts to furnish medical attention to individuals or single families for a fixed sum have already been prohibited by this Society, and do not now seem to be in existence in this community.

2. *Governmental Contracts*.—Such contracts made by election or appointment to Federal, State or municipal offices are already recognized as proper by this and other Societies.

3. *Corporations*.—A. *Railroad and Steamboat*.—The employment by a transportation company of a surgeon to care for men injured by the company seems to us to be allowable, if it does not prevent the patient from having free choice in the employment of his physician. We would prefer that the surgeon be paid for the actual work done and not by a yearly salary, as the latter invites bids from various men; and, in consequence, tends to lower the receipts of the successful surgeon, as well as to be a source of enmity between the applicants. But, as the matter is already before the American Medical Association, we will have to await the decision of that body. The employment of a physician or surgeon to care for the employees of a company for ailments not directly contracted through their work (i. e., for which the company cannot be held liable for damages), we do not consider as belonging under this head, but rather to club practice (6).

B. *Industrial*.—What has just been said about transportation companies would apply equally to industrial concerns.

4. *Insurance*.—This Society has already decided that making insurance examinations for small fees does not directly hurt the practice of other physicians, but simply adds to the income of the examiners. As the fees paid for some classes of examinations are insufficient, we hope that a combined effort on the part of the profession may be able to raise these fees. We would, however, strongly condemn any attempt

on the part of one physician to underbid another in order to obtain such a position, as being in the end suicidal as well as fratricidal. Such an underbidding, when proven, we would not consider as consistent with membership in this Society.

5. *Sick Benefit Insurance.*—When this involves only the payment of money to the insured, and their inspection to see if they are really sick, and nothing further, we think it beyond the control of this Society. If it includes medical attention, the case assumes a different aspect, and should be treated as a form of club practice.

6. *Club Practice.*—By this is meant that branch of contract practice which furnishes medical attention to members through an organization or club. Such an organization may be a simple club of men, who contribute so much weekly or monthly to the organization, which agrees to furnish them, and perhaps their families, medical attention free of extra cost. Or it may be a fraternal organization, with this feature as only one of the attractions. Or it may be an insurance company, which agrees to furnish medical attention in case of sickness. Or it may be an industrial or transportation company, which deducts a certain amount from the wages of its employees to pay a physician in case of illness. All of these organizations are confessedly formed to lower expenses in case of sickness, or, in other words, to decrease the earnings of the medical profession. They are generally formed with the idea of putting regularly into the pockets of the promoters money, which, in health, should stay with the individual, and, in disease, should go to pay for the work done by the physician.

The physician is paid a fixed salary, or by so much per member, or for the work actually done. In all cases, he seems to be paid much less than what he should expect to receive for the actual work, the advantage for him being that he is, in every case, paid at least something for his work. It has, however, been found that these organizations, formed to reduce medical fees, are always trying to make further reductions; and, in some countries (notably in Germany), they have succeeded in reducing the pay of their medical officers to a few cents a visit, so low indeed that the German doctors were forced to organize and go on a strike. Besides this, these clubs, by lowering the fees, un-

fairly take patients from other physicians, who are doing work and only charging just fees.

Let us further consider club practice by answering the questions presented at our last meeting.

In answer to the first three questions, we find that this class of practice injures the profession as a whole financially; that it lowers the dignity of the profession by putting the men who do this class of work at the mercy of "promoters"; and that it is a great injury to other members of the medical fraternity.

Should it be prohibited? Or is it allowable under certain conditions? Or can it be changed so as to become allowable?

It might possibly be allowable, if the physicians were paid for the actual work done at rates recognized as standard by the profession of the community. But, while this would break up many of these clubs, and make the work for the remaining more profitable for the "club doctors," it would nevertheless lower the dignity of the profession, and injure other physicians, by having their patients taken from them through the agents of the clubs. We, therefore, consider that this least objectional form of club practice should be prohibited along with the other forms, in which the doctor is paid so much per member, whether sick or well, or a regular salary.

Is it an expellable offence? We do not want to see a solitary man expelled from this Society, which ought to contain every reputable white physician in the community. We, moreover, think that every member of this Society, when he has it pointed out to him that he is injuring his brother physicians and will in the future injure himself by continuing to do this class of work, will, of his own free will, stop doing this work, if a reasonable time be allowed him. A medical society must, however, work for the good of the majority. If, therefore, any member "shall pursue a course calculated to reflect injuriously upon the medical profession," he may, according to our Constitution (articles VIII. and IX.), after due trial by the Committee on Ethics, be expelled from the Society. As this class of practice is manifestly injurious to the profession, we think that a member, who has had due warning, and still defies the Society, should be expelled. We further recommend that if any member be thus expelled, or resign to avoid such a trial, the charges be carried be-

fore the State Society, and that the other members of this Society refuse to consult with a man who is manifestly trying to injure his brother physicians.

We think that such action on the part of this Society will do much to reduce the amount of contract work in this section; and, while it may temporarily hurt some men, it will, in the future, prove of benefit to them as well as to the rest of the profession. It will also help us maintain our rates, even now woefully inadequate, when we consider the large demands on the profession. All other branches of business have had to combine in order to live, and the medical profession is, in consequence, being continually harder and harder pressed to make its daily bread. In this club practice we find the method through which we are being pushed the hardest; if we do not fight it now, we will in the end be forced by starvation to do so.

HERBERT OLD,
CHARLES R. GRANDY,
JOSEPH GRICE.

Book Notices.

How to Attract and Hold An Audience. By J. BERG ESENWEIN, A. M., M. D., Professor of the English Language and Literature in Pennsylvania Military College. Hinds & Noble, Publishers, New York city. Cloth. 12mo. Pp. 272. Price \$1 postpaid.

This is a book of rare interest. An attentive reading furnishes many useful suggestions to any one who has to address an audience. It serves as a guide to success, and by a path which escapes many embarrassments which discourage the novice. Every now and then, in medical societies, we hear attempts at oratory by some bombast. Let him take the lessons of this book to heart before he tries again. Few books of a general character placed on our table for notice have so enticed us to lay aside other work and read through and through. Many of the selections illustrative of different qualities of oratory, while oftentimes familiar quotations, possess a doubled eloquence because of the manner in which the author of the book introduces them.

The Worth of Words. By Dr. RALCY HUSTED BELL, with an Introduction by Dr. WILLIAM COLBY COOPER. *Third Edition, Revised and Enlarged.* Hinds & Noble, 31-35 W. 15th street, New York. Cloth. 12mo. Pp. 307. Library Edition, \$1.25; School Edition, 75 cents.

The reading of this book greatly helps one to lessen the grammatical errors which, by associations or otherwise, he acquires as a habit of speech. It is useful to all who would write or speak good English. Books of this sort are good to read through from time to time. The author gives a long list of ordinarily misused words, of vulgarisms and "words—no words," of every-day errors, of slang, and concludes with illustrations of how word meanings change. This is a book that, if properly used, will do great good to the public speaker, the writer, in the parlor or domestic talks, etc.

Compend of Pathology—General and Special. By ALFRED EDWARD THAYER, M. D., Professor of Pathology, University of Texas. *Second Edition, Containing 131 Illustrations.* Philadelphia: P. Blakiston's Son & Co. 1903. Flexible leather 12mo. Pp. 711.

This is a student's manual—controversial matter and references to authorities being omitted. As compared with the first edition, this second edition is thoroughly revised, and contains a chapter on the nervous system. Just as it is, this work would well serve as a model text-book for colleges—giving the facts which the student should know, and saving him from the consideration of debatable matters until the true facts are evolved. For the essential purposes of the general practitioner, it will meet his needs. The illustrations are judiciously selected and are quite numerous. We would be glad to learn of its general adoption as a medical college text-book instead of some of the ponderous volumes over which the student has to use his midnight lamp—so full of details that the essential points are beclouded. A first rate index is appended to the volume.

Howe's Handbook of Parliamentary Usage. By FRANK WILLIAM HOWE. Hinds & Noble, Publishers, 31-35 West 15th street, New York, N. Y. Pocket Size; pages 54. Price, 50 cents.

This is the best of ready-reference pocket size manuals on "Parliamentary Usage" that we

have ever seen. It is compiled from the authoritative manuals of Cushing, Roberts, Reed and Palmer. When the book is opened in the middle, an ingenious visual arrangement allows a complete summary of every rule needed in the conduct of any business or society meeting. Thus opened, every leaf (from top downwards) is trimmed shorter than the next leaf, so that the titles (motions) on 26 pages are visible at a glance. Each of these pages is instantly reached by simply lifting the title with the index finger of either hand, which brings into view all the rules, exceptions and quotations bearing on the particular motion under consideration. It gives a digest of the whole subject of parliamentary law within 56 pages. Such a book is of inestimable value to every one called on to preside over an assemblage of any kind that subjects itself to parliamentary control. Every president of a Medical Society certainly should have a copy.

Practitioner's Guide in the Diagnosis and Treatment of Diseases of Women. By Dr. GUSTAVUS M. BLECK, Professor of Operative Surgery in Jenner Medical College, Chicago, etc. M. Robertson & Co. 1903. Cloth. 8vo. Pp. 112.

We confess that we scarcely see the need for this book, since many books on the subjects named in the title are fuller and better—both for the practitioner and student. The chapters would better serve the purpose of journal articles than as parts of a book intended as such. Theoretical discussions are sacrificed so as better to meet the supposed needs of the practitioner. A number of trite illustrations are used on different pages, and others seem to have the purpose of showing such things as the “author’s” examining and operating room; the “author’s” laboratory; the “author’s” way of arranging hand for vaginal examination, etc., which is about the same as advised by all authors, etc. Price of the book is not stated.

Non-Surgical Treatise on Diseases of the Prostate Gland and Adnexa. By GEORGE WHITFIELD OVERALL, A. B., M. D., Formerly Professor of Physiology in Memphis Hospital Medical College. Chicago: March & Grant Co., Printers, for the Rowe Publishing Co., 1312-34 E. Washington street, Chicago. Small 8vo. Pp. 217.

The author, who has moved to Chicago, reviews the work of eminent authorities on the

subject of treatment of prostatic diseases. While he recognizes that some neglected cases require the use of the knife, he thinks the majority of cases can be cured by medicines, electrolysis, cataphoresis, etc. Years of study and experimentation have led him to devise instruments which enable him to apply the right things at the right place, and thus bring about good results. The details of his method are too lengthy to be incorporated in a notice of the book, which describes graphically every step of the various procedures he adopts to relieve his patient with disease of the prostate gland and adnexa. Much good will undoubtedly be secured by the judicious use of the means suggested.

Editorial.

Chief Causes of Death in Manila, P. I., During September, 1903.

According to the official report just received of the Board of Health for the Philippine Islands, the diseases causing the greatest mortality, with the number of deaths from each during the month of September, among the *resident* population of Manila, were as follows: Convulsions of children and eclampsia, 394; Asiatic cholera, 232; pulmonary tuberculosis, 71; diarrhœa and enteritis, 68; meningitis, 43; acute bronchitis, 42; dysentery, 39; chronic bronchitis, 38; beriberi, 35; malarial fevers, 23; congenital debility, 21; typhoid fever, 15. There were but 3 deaths from plague, and none from small-pox.

There were 290 cases of cholera, with 263 deaths, among *residents and transients* in the city during the month. The waters of the Pasig river and certain of its branches were recognized as infected, and up to September 7th there were only 13 cases of cholera, occurring largely among those who in spite of warning persisted in using these waters for drinking, cooking and domestic purposes. At this time, however, a spring of relatively fresh water was discovered discharging itself into the salt waters of the bay, just a few yards below the point of discharge of a large sewer. This spring was placed under quarantine on September 13th—analysis of the water showing it to have all the character of sewerage contamination, apparently

derived from a break in the sewer discharging in the vicinity of the spring. The use of water from this place is held to be directly responsible for the alarming increase in the number of cases, 120 cases having occurred during the seven days the spring was being used. The week following its closure the number was reduced to 79, the next week to 64, and after that a steady return to normal being noted. Attention is also called to the many difficulties in the way of controlling a population not as yet generally brought to a realization of the importance of sanitary measures.

The Maryland Medical Journal for February, 1904

Is the *Tuberculosis Exposition Number*, and is an exceedingly valuable number. The exposition was held in Baltimore January 25, 1904. After introductory remarks by the president, Dr. W. S. Thayer, of Baltimore. Mr. Fred. L. Hoffman, actuary of the Prudential Life Insurance Co., of Newark, N. J., gives "the statistical laws of tuberculosis"—one of the best compiled papers we know of on the subject. Dr. Lawrence F. Flick, of Philadelphia, emphasizes the dangers of "house infection of tuberculosis." Dr. Mazyck P. Ravenel, of Philadelphia, calls attention to "bovine tuberculosis as a factor in the causation of human tuberculosis," while D. E. Salmon, D. V. M., Washington, D. C., adds "some observations on the tuberculosis of animals." It appears that all of this valuable material was in type and consumed in the terrible conflagration of Baltimore during last month; but fortunately proof sheets were preserved, from which the February number was reset, and has been handsomely issued.

Examinations for Assistant Surgeons to the U. S. Public Health and Marine Hospital Service.

It is announced that a board of officers will meet in Washington, D. C., April 4, 1904, for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine Hospital Service. All grades above that of assistant surgeon receive longevity pay, ten per centum in addition to the regular salary for every five years' service up to forty per centum after twenty years' service. The tenure of office is permanent. For further information address the Surgeon-Gen-

eral Public Health and Marine Hospital Service, Washington, D. C.

The Tri-State Medical Association of Virginia and the Carolinas

Held its sixth annual session at Danville, Va., February 23-24, 1904. The attendance was about 150—including a number of eminent men from other States than those named in the title of the Association. Dr. Davis Furman, of Greenville, S. C., was president, and Dr. Rolfe E. Hughes, of Laurens, S. C., secretary. A number of important papers were read—many of which will appear in full or in abstract in the pages of this journal. Dr. Wm. L. Robinson, of Danville, Va., was elected president for the new year, and Dr. Hughes was continued as secretary. The session of 1905 will be held at Goldsboro, N. C.

Elizabeth City County (Va.) Health Report for 1903.

The report of the secretary, Dr. W. A. Plecker, of Hampton, Va., is a model one—giving details of importance in making up a table of vital statistics of a county. Exclusive of Fort Monroe and the National Soldiers' Home (which report to Washington), the estimated population was 16,577—7,960 whites and 8,617 negroes. The white death rate per 1,000 was 10.5; the negro death rate per 1,000 was 22.02. The remarks on milk supply for infant feeding are very interesting, and would prove profitable if the requirements are carried out.

Southern Medicine and Surgery

Is a new monthly journal, published in Chattanooga, Tenn., as the official organ of the Tri-State Medical Society of Alabama, Georgia and Tennessee and of the Chattanooga and Hamilton County Medical Society. Dr. Raymond Wallace is editor. Annual subscription, \$1. It has a managing editor and twelve collaborators. It is a good journal—nicely gotten up and well edited.

Contributions to the Medical Brief, 1903.

This is a handsomely issued pamphlet, containing the portraits of many contributors to the *Medical Brief* during 1903. These portraits may easily be taken from the pamphlets and framed for the doctor's office.

THE Virginia Medical Semi-Monthly.

(FORMERLY VIRGINIA MEDICAL MONTHLY.)

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Original Communications.

ATROPHY OF THE PROSTATE.*

By ROBERT C. BRYAN, M. D., Richmond, Va.

Lecturer, and Chief of Clinic in Genito-Urinary Diseases, University College of Medicine, Richmond, Va., etc.

Probably no two organs in the human economy are now exciting more pathological and surgical interest than the thyroid and prostate glands. The prostate is of particular regional interest, since but few men of advanced life preserve the normal size and character of this viscus. Hypertrophy of the organ has been so attentively and exhaustively prosecuted that its antithesis, atrophy, has suffered by the investigation, and there appears but little literature, particularly of English origin, to recognize, diagnose and treat this condition.

The normal prostate is, as we know, a gland weighing about six drams, with its base against the bladder, its apex directed towards the urogenital diaphragm; and so situated that two lines drawn from the tip of the coccyx to the superior and inferior borders of the symphysis pubis are tangent to this body. It is composed of glands, numerous, elastic, and sparse connective tissue fibres with a marked interposition of smooth muscle fibres. This relationship shows great variation in different individuals, and in the same individual at different periods of life. The smooth muscle fibres seemingly radiate from the uterus masculinus, embracing the glandular elements in its meshes and forming the true skeleton framework for the organ. At and around the internal os these fibres become much thickened, prismatic on cross-section, and form with the internal muscular coat of the bladder the true powerful internal sphincter, or sphincter vesicæ internus. The arteries are the internal pudic, the vesical and hemorrhoidal.

*Read before the Tri-State Medical Association of Virginia and the Carolinas during its session held at Danville, Va., Feb. 23-24, 1904.

It is very interesting to note different authoritative statements in regard to the relative frequency of prostatic hypertrophy and atrophy.

Desnos, in the examination of 100 females between the years of 48 and 65, found a very interesting condition, simulating to all intents and purposes the condition of prostatic hypertrophy. These women would urinate frequently during the night, the evacuation of the urine being retarded, slow and at times painful, thereby giving the appearance of the first stage of prostatic hypertrophy. He attributed this condition to an atonic condition of the bladder due probably to arterio-sclerosis.

Arterial sclerosis of the urogenital tract is found in some, but not all conditions of prostatic hypertrophy—a pronounced arterio-sclerosis being much more liable to produce atrophy, as shown by sclerosis of the coronary arteries in degeneration of the heart muscle, and sclerosis in the renal arteries producing the genuine contracted kidney. Sclerosis, therefore, of the larger abdominal and more remote arteries would be much more likely to produce hypertrophy than atrophy.

Thompson, in the examination of 164 individuals between the years of 60 and 94, found no organic change in 97 cases. In the remaining 67 he found 56 times an hypertrophy and 11 times an atrophy. In 26 of these cases of hypertrophy 30 were only of a moderate grade and gave no symptomatic evidence of an enlargement of that organ. The collective results, therefore, were 34 per cent. of the men over 60 years of age with a hypertrophy, only 15 per cent. of whom gave significant symptoms of the disease. These figures agree with the statistics of Guyon absolutely.

Messer observed in patients over 60 years of age 35 times an hypertrophy and 20 times an atrophy.

Dittel examined in a morgue in Vienna 115 individuals, the youngest of whom was 52, the oldest 100—average 70—and found 18 times

an hypertrophy and 36 times an atrophy, or about 15 per cent. of hypertrophy against 30 per cent. of atrophy.

Lydston states that "but few men over 20 years of age have an absolutely normal prostate."

By atrophy of the prostate, one understands a diminution in the size of that organ, which may be congenital or acquired.

Civiale (in *Diseases of the Genital and Urinary Tract*) says: "There are many cases known of atrophy of the prostate, due ostensibly to calculi, the testicle being normal"; and further, "it is an unquestionable fact that the presence of a stone markedly influences the glandular development of the prostate."

A sequestered prostate is sometimes found as a congenital anomaly associated with other anomalies of the genito-urinary tract, and particularly with abnormalities of the testicle. Inflammatory processes in that organ consequent to suppuration produce a fibrosis and lead to a destruction of the secreting parenchyma of the prostate.

Prostatic atrophy may be given the following five (5) etiological factors:

- (1) The inflammatory.
- (2) The atrophy of wasting disease.
- (3) The atrophy caused by pressure.
- (4) The congenital form.
- (5) The senile form.

(1) The atrophy following castration must be considered, whether it is done before the time of puberty, and consequently before the time at which the prostate begins rapidly to lose its infantile characteristics, or after the sexual development. In the first instance it is probably not an atrophy, but an arrest of development entirely similar to the larynx, which no one would pronounce as atrophy. The changes in the adult prostate following castration are primarily a diminution in the glandular elements of the organ and later, an actual atrophy of the fibro-muscular elements. A prostate after castration in early life retains the characteristics of that organ, but is imperfectly developed, showing sparse glandular elements of simple structure, the muscular fibres and connective tissue predominating. Whether castration for hypertrophy of the prostate leads to a true atrophy appears to be improbable, for up to the present no accurate histological and microscopic examination can confirm this assertion. For this reason, the statement that atrophy follows

hypertrophy as the result of castration, must be taken *cum grano salis*, if not positively negated.

(2) The atrophy of wasting disease, particularly tuberculosis, is relatively no more than that of any other organ in the body, and may follow such conditions as trauma, inflammation, gonorrhœa, pyemia, typhoid, influenza, pneumonia, variola, tuberculosis of the prostate, testicle, cord and epididymis, resection of the vas, periurethritis-tuberculosa, parenchymatous injection of iodine, iodoformol and carbolic acid into the organ, the injection of zinc chloride into the epididymis, perineal trauma and contusions.

(3) The atrophy caused by pressure is that condition in which a mechanical pressure is exerted on the prostate, such as tumors of the neighborhood, abscesses, cysts (*echinococcus*), myoma, chondroma, enchondroma, vesical and prostatic stones, and finally that form of atrophy which follows urethral stricture or the imperfect passage of urine—this stagnating and forceful column thus exercising its direct compressing effect upon the organ. This is a relatively frequent occurrence and is shown by the fact that hypertrophy of the prostate and urethral strictures are practically never coincident.

(4) The congenital form may assume any anomaly, but it is particularly noticed with vesical exstrophy, monorchismus and bilateral cryptorchismus.

(5) The senile form, and the form which concerns us here, is by far the most frequent of the many atrophic varieties, Thompson stating that "it is the resulting phenomena of regressive metamorphoses."

Dittel and Chrastina found an atrophy in 31.3 per cent. in patients over 60 years of age. This relatively high percentage is of particular interest since these investigators confined their examinations only to the living subject, no autopsy figures being given.

Messer found in 100 examinations 20 atrophies, none weighing over 15.3 grains. The figures of Thompson and Messer (19 per cent.) are possibly low, since many of the milder forms are not sufficiently annoying to compel surgical recognition or interference.

Senile atrophy, like hypertrophy, presents itself but rarely before the fiftieth year. English maintains that it appears earlier—at the fortieth year. Other investigators cite instances of this condition occurring at 17, 22, 26 and 33 years, respectively.

Prostatic atrophy depends upon a disappear-

ance of the collective constituent elements of the organ, affecting at first the glandular and later the fibro-muscular structures. This atrophic condition rarely limits itself only to one side; the two lobes are usually, however, unequally involved. As etiological factors must be mentioned, the pressure of passive congestion, early an excessive venery, senile retrogression and intimate arterial sclerosis are by far the most usual causes.

Pathology.—Senile atrophy of the prostate presents the same picture as the atrophy resulting from castration in early life, the organ appearing uniformly reduced in size. It is harder, the cut surface smoother, and by higher grades of atrophy the gland is only as large as a bean or a pea; in other instances, and the more marked, it cannot be felt at all.

Macroscopically, the tissues have a uniform white or grayish-white color, are hard, resistant to the finger and are in marked contrast to the normal yellowish, porous, spongy, elastic prostate. By marked fatty degeneration of the elements, the gland is yellowish and of a gelatinous consistency. If caused by urethral stricture, the excretory ducts are dilated at the expense of the surrounding parenchyma, and in the region of their urethral mouths there are pocket-like cavities covered over with the mucous membrane of the pars prostatica. In other instances these cystic ducts penetrate well into the substance of the gland, may become confluent with its fellow, and be the irritable possessor of inspissated epithelium or stones, which now only exaggerates the condition, producing further atrophy by its mere presence.

Microscopically, the organ shows no, or only occasionally, rudimentary acini. In the less marked cases the changes are essentially limited to the ducts in which the epithelium has undergone fatty degeneration. In the more pronounced cases the acini have absolutely disappeared and have lost their original configuration; irregular cleft-like slits now separate them; here and there a few epithelial cells are recognizable, the excretory ducts receding more and more, the epithelium becomes less distinct and obliteration is the ultimate outcome. The muscle fibres undergo fatty degeneration and are eliminated, so that the organ appears to be made up only of elastic and connective tissue fibres.

Thompson states that the senile form is marked by the fibro-muscular structures being

exceptionally hard and tough, often being in the form of circumscribed tumors. The atrophy of wasting diseases shows a progressive and regular elimination of all the constituent elements.

Another form of senile atrophy is described by Steinlin under the name of "compartment-like." On cut surface the central part of the gland shows a large number of irregularly formed tortuous cavities filled with a colorless fluid and separated from other such spaces by a fibrillar substance. The existence of this condition is explained by the original predominating glandular elements forming a thick strong envelope around this degenerated cavernous center. In this way marked retraction in the pars prostatica may occur, in which a relatively large catheter may be caught. Similarly atrophy of the prostate, caused by prostatic calculi, gives rise to the cystic condition in the excretory ducts of the acini, which cysts are rounded, having a smooth inner surface, and are lined with epithelium, which is, however, much flattened out. Atrophy of the prostate in consequence of stricture, and particularly if in the pars prostatica and membranous urethra, may give that part of the urethra this fan-shaped appearance, the base towards the bladder, the apex corresponding to the urethral prostatic duct and directly caused by the pressure of the impeded column of urine. Some of the excretory ducts may be so dilated as to run the length of the prostate, the stroma between these diverticulæ being obliterated. In other cases this dilatation may be uniform throughout the gland, the prostate then possessing but little stroma and the sieve-like openings not infrequently filled with stones as they communicate with the urethra.

Symptoms.—In review of what has been said, and the study of literature pertaining thereto, we see that this condition of atrophy may be present at any age, but particularly in the advanced. The inflammatory and senile are the most frequent, and the ones that will now be considered.

The picture is not a constant one depending "a priori" on the degree of the atrophy and the changes caused thereby in the urinary organs. The lighter cases present no symptoms; the more severe a progressive and unrelenting "ischuria paradoxa," with profound constitutional disturbances. The earliest and most unvarying symptom is enuresis, diurnal and nocturnal, the bladder being completely evacuated

at each session; the daily quantity is not increased, and the individual evacuations are less than normal, only more often repeated. It is not an overflow of the bladder in consequence of the stretching and over-filling, but a condition brought about by the weakness of the prostatic sphincter. Later the unfortunate experiences difficulty in urination, post-urinal leakage, pain in the perineum and along the course of the urethra and radiating to the glans penis. With a further insufficiency of the cut off muscle, this dribbling is more marked, first by night and then by day, and finally an absolute incontinence is established. This condition may be due to one of two causes, or *directly* to the already mentioned insufficiency of the internal sphincter with the associated atrophic changes in the bladder, in which instance there is no residual urine; and *indirectly* by the formation of a valve-like fold at the internal os, when there is a large amount of residual urine, even exceeding in quantity the residuum of prostatic hypertrophy. The greatly distended bladder, its degenerated musculature, the involuntary overflow, the actual incontinence, the marked systematic disturbances, the polyuria, albuminuria, kidney changes, and later urinary intoxication, present a similar picture to that unfortunate, the opposite of atrophy, prostatic hypertrophy. In more seldom cases prostatic atrophy produces a chronic retention, simulating the retention and overflow of hypertrophy. The cause of this condition is either trabeculæ or valve-like formations at the internal orifice, which by rapid atrophy of the gland, together with weakness of the bladder and atrophy of its muscular coats, gives rise to this condition. In the beginning of the disease the symptoms are exactly similar to prostatic hypertrophy. The patient presents the well-known symptoms of the prostatiker. At first the night rest is disturbed through frequent demands to urinate, and later this condition makes itself known during the day. Examination at this period shows that there is no residual urine in the bladder. The cause of this frequent desire to urinate appears to be not a congestion, as in prostatic hypertrophy, but the initial expression of the disappearance of the governing nerves of the prostate and particularly those ganglion cells lying in the periphery of the organ. The urine shows in the beginning of the disease no alteration. Soon, however, it becomes infected, despite the most rigid precautions to the contrary. If now,

the bladder be examined with the catheter, a small amount of residual urine is found to be present, the patient exercising every power to retain it. During sleep the bladder is no longer a reservoir, every drop of the urine being voided involuntarily. The cause of the inability to retain the urine is due to the gradually increasing atonic, weak internal sphincter. This muscle ring seems to undergo relatively early the atrophic changes, probably beginning to lose its tone with the disappearance of the glandular elements. One of the earlier symptoms which frequently presents itself in the beginning of the disease is a cessation of the sexual potency; the patients have insufficient erections, and the character of the ejaculation is also changed. In many cases of prostatic atrophy immotile spermatozoa are found, a condition which, through the absence of prostatic secretion, is not hard to explain. In other cases there is a false aspermatisms, the semen regurgitating into the bladder, which seems to prove the fact that in normal ejaculation the regurgitation of the semen is not prevented by the congested caput gallinaginis, but by the internal sphincter.

The urine in prostatic atrophy seldom remains unchanged, but becomes relatively early infected, whereas by prostatic hypertrophy, if no instrument be introduced into the bladder, the urine often remains normal for years. In atrophy, independent of catheterization, and soon after the appearance of the disease, a severe type of cystitis is established. Its existence is explained through the defective sphincter action between the urethra and the bladder, and the consequent invasion of bacteria from the outer world.

In those cases of prostatic atrophy with the formation of cysts the patent excretory ducts become widened, filled with the infected urine from the bladder, and soon these cavities are congested with ammoniacal pussy urine.

In those forms of prostatic atrophy with the formation of valve-like obstructions at the internal orifice the resulting phenomena are essentially different, for here, as in hypertrophy, there is an obstruction to the evacuation of the urine; hence the retention and the development of the other complications and sequelæ. A close observation gives data which are sufficiently pronounced for one not to make a false diagnosis.

Since with atrophy of the prostate there is regularly an early weakness of the bladder with

fatty degeneration and cirrhosis of its muscular wall, there can never be marked vesical trabeculæ and a strong eccentric hypertrophy. The bladder in its effort to overcome the valve-like obstruction becomes early incomensatory and presents practically the picture of the third stage of prostatic hypertrophy, or the stage of distention. In such cases the third stage seems to follow abruptly on the first; the patient is soon inclined to take up the catheter and the train of symptoms which are characteristic, for the second period of hypertrophy are entirely lacking. In atrophy one does not observe the attacks of acute inter-current retention with marked and often very painful onsets of frequent urination, characteristic of an hypertrophic bladder fighting a losing battle against the oft repeated congestion and acute œdema of the prostate, but it is a protracted, continuous condition, gradually increasing in severity. Cystoscopic examination in the pronounced case gives the general phenomena of a chronic cystitis, diffuse capillary injection, velvet-like condition of the mucous membrane, and here and there whitish or yellowish spots of desquamation. In the earlier stages of catarrh the vessels are seen to be tortuous and radiant.

Trabeculæ are present only in that form associated with the valve formation at the internal os, and later when the stretching of the bladder is still more pronounced, these trabeculæ are obliterated. The cystoscopic picture gives in this condition the free edge of the valve running straight across or weakly concave at the margin of the internal os. The bulging tumors corresponding to the prostatic lobes are never seen. If it is a case of atrophy with the formation of cysts and dilatation and retraction of the acini ducts, much difficulty may be experienced in the introduction of the cystoscope, and even false passages instituted. Steinlin mentions a case of such great dimensions that the end of the finger could be inserted into the cavity.

Impotencia is another significant and unvarying symptom, and is due to vesical regurgitation. Annihilation of the ducts ejaculatorios and prostatic secretion are noted in the more advanced cases.

Diagnosis of prostatic atrophy is easily made. By rectal examination in the early stage of the disease one finds the prostate small, smaller than usual, not sensitive, not painful, its surface smooth and regular. In the later stages

the atrophy can be minimal, the organ much reduced in volume, or indeed entirely absent, so that the palpating finger recognizes only the prostatic urethra instead of the well known mass of the normal gland.

The rudimentary prostate presents a gland asymmetrical, the one lobe being more reduced than the other, its surface knotty and harder than normal, pressure causing an unpleasant sensation. The normal active and passive resistance offered to the urethral sound is lacking; it falls readily into the bladder; and, as in prostatic hypertrophy, the urethral length is increased; so in atrophy is there a marked decrease noted.

Examination per rectum with the urethral sound *in situ* gives an anomalous condition, the membranous urethra seemingly meeting the bladder, there being no interposition of the prostatic substance.

Therapy is aimed in the earlier stages to combat the weakening sphincter. This may be done by a regular and gentle insertion of a large urethral sound, which procedure seems to exercise a very favorable influence, if early instituted, upon the very annoying urinary frequency. Measures must be adopted antagonistic to the inflammatory form; the posterior urethritis, gonorrhœa, abscesses and tuberculosis must be treated by radical intervention, trying thus to limit the destructive area and the consequent fibrosis and retraction. The atrophy of pressure is the most easily alleviated. Urethral strictures, vesical and prostatic calculi, neighboring tumors and cysts must be removed. The atrophy of inanition is best treated by the daily introduction of a large sound retained from five to ten minutes; in other cases a catheter seems indicated.

Ramon Guiterras commends massage for this condition. For the sphincteric insufficiency, faradization affords the only relief—(1) by rectal and urethral application, (2) by rectal and perineal application, (3) by urethral and suprabubic, (4) by urethral and perineal. If the incontinence, however, is absolute, faradization is useless. Baths, preferably hot sitz together with strychnine and "prostaden," have given gratifying results. For persisting and incontrollable incontinence an urinal must be worn.

Operative procedures are intended to form a resistance at the internal sphincter or along the pars prostatica. By perineal section the ure-

thra is laid bare and torsion of its walls in its long axis practiced, as advocated by Gursney for the relief of incontinence in women, for which condition it has given brilliant results. The patient then must adopt catheter life, since a restoration of the detrusor function is not possible. The operation in man has not been of the successful character that encouraged its adoption from the female results. Just how much the prostate can regenerate after the exciting cause is removed is impossible to say. Another operation is the implantation of the bulbus and penile urethra in the vertex of the bladder just above the symphysis pubis or Mickulicz operation, which he has practiced successfully for perineal fistulae, and excessive loss of urethral substance. The submucosa injection of unguentum paraffini has also been employed upon the principle of offering an impediment to the urine in the prostatic urethra.

The treatment of the cystitis originating from this condition demands constant and increasing attention. As we have already seen, the distention of the bladder may be even greater than in prostatic hypertrophy; so that a systematic evacuation must be adopted, the greatest aseptic precautions employed, and by the gradual evacuation constantly increased in quantity, the bladder may regain its normal tone.

In those seldom varieties of prostatic atrophy with the formation of valve-like folds at the internal orifice, palliative treatment seems to be indicated; and the chronic retention cases are best treated only by the catheter. The suggestion that these obstacles be removed by radical procedure, such as Bottini, Chetwood and perineal section, are uniformly unsuccessful, since the bladder has lost its contractile properties, and the patient must, therefore, continue with his catheter. The other synchronous and painful complications must be combatted and handled according to their general surgical indications.

BIBLIOGRAPHY.

- Reginald Harrison—Surgical Disorders of Urinary Organs.
 Von Frisch—Der Prostata.
 Socin and Burckhardt—Der Prostata.
 Casper—Eine Lehrbuch der Urologie.
 Keyes—Genito-Urinary Diseases.
 White and Martin—Genito-Urinary and Venereal Diseases.
 Fuller—Diseases of the Genito-Urinary System.
 Kaufmann—"Pathologische Anatomie."
 Senn—Tuberculosis of the Genito-Urinary Organs.
 Zeissl—Venerische Krankheiten.
 Zuckerkandl—Der Blase.

Morton—Genito-Urinary Diseases and Syphilis.
 An American Text-Book of Genito-Urinary Diseases, Syphilis and Diseases of the Skin.
 Lydston—

FURUNCLE AND CARBUNCLE.*

By WALLACE NEFF, M. D., Washington, D. C.

My object in associating two diseases which differ materially in their pathology is on account of their similarity in the incipient stage, which renders the differential diagnosis difficult, and because the treatment—especially the prophylactic and abortive treatment—is applicable to both.

We are chiefly indebted to John Collins Warren for our knowledge of the pathology of these diseases.

A *furuncle* is caused by the invasion of pyogenic cocci from the epidermis by one of two routes—either down the hair sheath to different depths in the skin and subcutaneous tissue, or through the sudoriferous gland ducts. The first route is the more common.

The active growth of the bacteria in the connective tissue fibres causes a coagulation—necrosis, or so-called "core" of the boil. "The part destroyed and cast off consists of the sebaceous gland and hair follicle" (Neumann).

Furuncles are infectious, and are auto-inoculable. They may also be transmitted from one individual to another. They are usually due to infection from dirty finger nails or clothing, to bruising of the skin, bite of an insect, or an enfeebled condition of the system, the result of certain organic diseases, such as diabetes.

The first symptom is the appearance of a small macule or papule at the opening of a hair follicle. Intense itching follows, but there is little pain. The inflammation extends deeper, and the removal of the hair does not stop it. A crust then forms, and a little pus escapes. Infiltration extends to the subcutaneous tissue, and the swelling increases, assuming a characteristic cone-shape appearance. There is now great tension, and the pain is severe on pressure. The discharge becomes more free, and the opening extends down to the pus cavity containing the slough, which is expelled spontaneously in a week or ten days. The opening then heals by granulation.

*Read before the Medical and Surgical Society of Washington, D. C., December 3, 1903.

The parts usually affected are the neck, buttocks, back of hands, legs, cheeks and nose, or all portions of the body may be involved in a condition of general furunculosis. One special locality, the external auditory canal, is often attacked. A furuncle in this region is exquisitely painful, causing loss of sleep, chill and fever, and if the inflammation extends to the middle ear, it may become exceedingly dangerous.

Carbuncle is not a simple, but a grave disease. It is a suppurative and gangrenous inflammation of the skin and subcutaneous cellular tissue, extending downwards to the deep fascia, where it stops; and is caused most frequently by the staphylococcus aureus and albus.

It is usually the result of infection by the finger nails, or irritation of the clothing. Constitutional diseases, such as diabetes, hepatic disorders, chronic Bright's, and chronic alcoholism favor the growth of the bacteria. It is rare in children, and most common in persons over forty. Men are affected more frequently than women. Butchers are especially subject to it. Contact with decomposing animal and vegetable matter and bad hygienic surroundings are predisposing causes.

It begins as a small papule, which itches and burns intensely, and may be mistaken for the bite of an insect.

The inflammation extends downwards and laterally. When it reaches the subcutaneous cellular tissue it continues to spread laterally, the deep fascia covering the muscle preventing it from going deeper. The skin of the upper dorsal region, where carbuncle is most frequent, is very thick, and forms a mass of dense fibrous tissue. The hair follicles extend downward only a short distance, and there would be no communication with the subcutaneous adipose tissue, were it not for the columnæ adiposæ, which extend upward from below. Carbuncle, unlike furuncle, is flat, broad and circular. The skin is tense, red, infiltrated and dense, with several small openings, from which pus oozes. The skin in the center is gradually destroyed, leaving a crater. As the disease progresses the pus seeks an outlet, and works from one interspace to another, and gradually involves the deeper tissues.

The coagulation-necrosis is so complete that large sloughs form.

Carbuncles usually vary from two to three inches in diameter, but may attain a great size.

Champlin reports a case of carbuncle of the back 11 by 8½ inches, with 15 small openings. The case recovered. (*American Medicine*, 1902, I., p. 380.)

It reaches its full development in about two weeks, and is five or six weeks longer in healing.

Carbuncle is sometimes mistaken for erysipelas, but intensity of redness at the periphery is characteristic of erysipelas, and not of carbuncle. The pain and redness of malignant pustule resembles carbuncle, but the presence of vesicles around the edges, depressed surface, absence of pain, and presence of anthrax bacillus after two days, will exclude carbuncle. In circumscribed and diffuse phlegmon of the face there is a swollen and infiltrated patch, generally pale, while in carbuncle there is intense redness of the skin. The parts most frequently affected are the neck, back, hips, buttocks, arms, legs, upper lip, and rarely the tip of the nose.

It is infectious—flies and other insects being common carriers.

Prognosis, depends on the location, severity of the disease, age and constitution of the patient. Uncomplicated cases recover, but in the broken-down and aged, death may result from exhaustion. Complications, such as thrombophlebitis, meningitis, septicæmia and pyæmia, often cause a fatal result.

The less pain the more grave the case, as this condition points to a serious state of the nervous system. The disappearance of the knee-jerk is a very important symptom, for it indicates a serious deterioration of the nervous system, and shows that it no longer controls nutrition. It is in these cases that insidious, gangrenous carbuncles carry off so many diabetic and alcoholic patients.

Treatment may be divided into (1) preventive, (2) abortive, (3) medicinal, (4) operative. It is difficult to differentiate between furuncle and carbuncle in the incipient stage. Any inflammatory process of the pilo-sebaceous system should be regarded as a case of *noli me tangere*. It should not be handled roughly, for pressure makes it worse. If a pimple is squeezed, a boil can be made out of it, and a boil that has been tormented, may develop into a carbuncle.

The best thing to do is to protect it from the finger nails, and irritation of the clothing, by covering it with oxide of zinc plaster or some

protective dressing, and let it alone. If it persists, *abortive* treatment may be tried. The injection of a few drops of pure carbolic acid will often succeed. This method, however, is painful. The introduction of a needle heated to a *white* heat is very effective. This is painful if the needle is *red* hot, but not if it is *white* hot.

This method can be employed without waiting to make a differential diagnosis. It will abort a large percentage of boils, if done within three days, and frequently carbuncles. In more advanced cases, a single application of caustic potash sometimes checks the process.

The application of heat is a favorite method. Heat to be effective must be continuous, and this is difficult to carry out. If, however, the patient will take the time to devote to it, it can be done. The best way to accomplish it, is to take a spirit lamp and cup, and keep the water boiling constantly. Two sponges and two pieces of wood to squeeze them out are necessary. Apply the hot sponge to the affected part, and hold it in place with a towel. As soon as it begins to cool, put it back to be reheated and immediately apply the other. In this way the heat can be kept up uninterruptedly, and either the inflammation will subside, or rapid suppuration will be induced. A day devoted to this method will usually be sufficient. It is well to remember that heat allays the pain of inflammation, but increases that of suppuration.

Medicinal treatment consists in the application of antiseptic solution, such as 1-3000 bichloride, 1 per cent. solution of trikresol with a protective covering, equal parts of ichthyol and lanoline, some soothing application, as lead and opium wash, or better than all, equal parts of spirits turpentine and castor oil. This combination promptly relieves the pain and tension, induces free evacuation of pus, prevents extension of inflammation, and promotes healthy granulation after the slough is thrown off. Just what the physiological action is, it is hard to explain. The turpentine, of course, possesses antiseptic properties, but there must be some virtue in its combination with castor oil, for it does not possess the same efficacy when any other oil or emolient is used. Dr. Conner, of Cincinnati, first proposed this treatment some years ago. Dr. Carothers, one of his assistants, reports 25 cases of carbuncle which, with one exception, were cured by this agent alone. (*Cincinnati Lancet and Clinic*, May 4, 1901, pp.

413, 418.) It should be applied to the boil or carbuncle frequently, the gauze, or absorbent cotton, being soaked with it all the time. Good results are claimed in carbuncle from the internal administration of Brewer's yeast 3j to 3ij three times a day (Alfred Gordon, *Phila. Med. Jour.*, 1899, III, p. 687); also from antistrep-tococcic serum (E. O. Ashe, *South African Med. Jour.*, Cape Town, 1898, VI, p. 119). The best constitutional treatment is nutritious diet, and the judicious use of stimulants, tonics and anodynes.

Operative.—When a furuncle or a carbuncle comes into the hands of the surgeon, it has invariably been so tormented and tampered with that the time for aborting it has passed, and immediate operative attention is necessary. In the case of a furuncle, a simple incision, evacuation of the "core," and an antiseptic dressing will soon be followed by repair by granulation. With a carbuncle, however, more radical measures are necessary. The popular incision is the crucial, but it is not the best. Excision is far better. If this is done early enough, it will put a stop to the whole process, and can be executed painlessly under a local anæsthetic. If, however, the disease has progressed far, and there are extensive sloughs and a wide area of inflamed or gangrenous tissue, the operation becomes more formidable, and should be done under a general anæsthetic. The excision should be complete, but if done with a knife it is a very bloody operation. It is better to make the skin incision with a knife, and complete the operation with the actual, or thermo-cautery, or do the entire operation with the cautery knife. This seals the blood vessels and lymphatics, and prevents systemic infection. All of the diseased tissue should be thoroughly removed down to the deep fascia and the wound dressed antiseptically, preferably with the 1 per cent. solution of trikresol. The effect of this radical treatment is immediate, the pain is relieved, the fever subsides, and the delirium disappears.

With proper constitutional treatment and a nutritious diet, a good result will be secured, unless we have a thoroughly broken-down subject to deal with, or one complicated by serious organic lesions, which unfortunately is only too frequently the case. Under these circumstances the condition is one of great gravity.

DIPHTHERIA ANTITOXIN—ITS PRODUCTION, USES, ETC.

By WILLIAM R. JONES, M. D., Ph. G., Richmond, Va.,

Professor of Medical Chemistry and Toxicology, University College of Medicine.

The treatment of diphtheria by antitoxin has long since passed through the experimental stage, and has won itself the right to be considered a specific.

The discovery of antitoxin by Behring in 1891, and the introduction of the serum treatment in 1893, mark the period of one of the greatest achievements of medical science since the introduction of vaccination by Jenner in 1798. A disease which carried terror to the hearts of thousands has lost its power; a disease with a mortality of 73 per cent. has been so mastered that 73 per cent. is a conservative statement of the percentage of recoveries—the mortality being reduced by 50 per cent. or 60 per cent.

Antitoxin is obtained by making pure cultures of the bacilli, in which the toxin is formed; the bacilli are killed by the addition of a germicide, such as trikresol, and by repeated filtration the dead germs are removed.

The pure toxin, thus obtained, is injected into horse, beginning with a small dose and gradually increasing the quantity until complete immunity is established. The development of immunity in the horse is due to the formation of antitoxin in excess in his blood serum. A part of the antitoxin is consumed in neutralizing the injected toxin; the excess remains unchanged, and may be utilized for therapeutic purposes.

When immunity has been thoroughly established in the horse, which requires a period of several months—about six—the blood is drawn from a jugular vein into sterilized vessel and allowed to clot. The clear serum is then removed, a small quantity of trikresol is added as a preservative antiseptic, which causes a precipitation of some of the albuminous constituents, the serum is filtered and is ready for use. The precipitation following the use of trikresol is said to lessen the danger of urticarial eruptions, which have been observed to follow the use of antitoxin.

An antitoxic unit is the quantity of antitoxin required to neutralize 100 times the minimum fatal dose of toxin for the guinea pig.

The toxic and antitoxic units have to be deter-

mined by tedious experiments upon animals, for it has not been possible as yet to separate these bodies with certainty in a pure state.

Antitoxin, as now prepared, is a clear, limpid fluid, having the color of blood serum. When kept in a cool, dark place it is said to preserve its efficacy for about a year; but often before this time it becomes turbid, from the formation of a precipitate, and it is then unfit for use.

Very little is known, with certainty, as to the manner in which antitoxin acts as a preventive and curative agent. Ingenious theories have been advanced, none of which have any very practical interest. The morphological theory assumes that the resistance of the cells of the body is increased, and thus protection is afforded. The chemical theory assumes that the antitoxin forms an inert compound by union with the toxin; this theory is probably nearer the truth, and deserves favorable consideration.

In the administration of antitoxin we have no means of determining with accuracy the dose suitable to each case. The size of the dose depends upon the severity of the case, the time of injection, and the age of the patient. Taking all these factors into consideration, it may be said that the dose varies from 1000 to 4000 antitoxic units, but there is a constant tendency to increase the dose, and experience goes to show that none but the mildest cases require less than 2000 units for the initial dose. One objection to the use of large doses has been removed by the introduction of concentrated serum. The largest doses now employed do not require more than 5 to 8 c. c., whereas with the standard serum, as formerly employed, sometimes as much as 20 c. c. had to be used. Besides the pain and discomfort attending the use of so large a quantity of serum, there is no doubt that some of the disagreeable symptoms following the injection, such as urticaria and albuminuria, were due to the large amount of horse serum introduced into the circulation.

A child two years of age, with a well developed case of diphtheria, should be given 2000 antitoxin units as soon as the diagnosis is made, and if there be some element of doubt as regards the true diphtheritic character of the disease, the antitoxin should still be employed, since no harm will be done. If no marked improvement occur within 12 hours, another similar dose should be given, and this may be repeated a second time.

As to location of injections.—Below the point

of scapula, under the skin of the buttocks or thighs.

As to the local consequences of injection, the following complications may result: 1, urticaria may appear in ten days, usually mild; 2, temporary albuminuria; 3, swelling of joints.

Two fatalities have been reported following the use of antitoxin in the healthy child. A case is reported in the *Journal of the American Association*, April 4, 1896, of a healthy boy, five years old, who was given an injection as a prophylactic, and died in five minutes. Another case is reported in the *Journal American Med.* 1896, occurring in Berlin.

As to the effects of the antitoxin upon the diphtheritic process.—The improvement should occur within a period of 24 hours. Severe cases of diphtheria are converted by its use into mild ones.

Time of the injection has a vital relation to its efficiency. It should be given within three days—later injections having little effect. Report of the American Pediatric Society shows a mortality in first day injections of 4.7 per cent; second day injections, 7.4 per cent.; third day injections, 8.8 per cent.; fourth day injections, 20.7 per cent.; fifth day injections, 35.3 per cent.

Protective injections last four weeks.

Limitation to the efficiency of antitoxin depends upon the amount of streptococcic infection, upon which processes it can have no direct effect.

Other methods of treatment should be pursued at the same time that the antitoxin is being used.

209 West Grace St.

X-RAY FOR REDUCING ENLARGED TONSILS.

By ALEXANDER IRVINE, M. D., Ashland, W. Va.,
Late Superintendent Miller's Hospital, No. 1.

I wish to suggest a trial of the X-ray in the treatment of enlarged tonsils. Every physician knows how common the trouble and how rebellious to treatment, except with the tonsillotomy. As is well known, the X-ray has very decided effects in reducing all glandular enlargements—e. g., glands of neck (scrofulous), spleen, liver, etc.

All that is needed is a specially devised tube, as Caldwell's; or a small size Ferguson vaginal speculum may be used. This is passed through a hole in a large sheet of lead and into the mouth in the desired direction. To prevent the gagging from pressure on the base of the tongue, the throat can be sprayed with a weak solution of codeine. The apparatus devised by Dr. Wm. I. Morton, of New York, for treatment of cancer of the throat by means of radium, confined in a small glass tube, should be well adapted to the treatment of enlarged tonsils. But until radium becomes more plentiful, the X-ray will prove more practical.

BIBLIOGRAPHY.

International Journal Surgery, October, 1903.
The Röntgen Rays in Medicine and Surgery (Williams).

INFANT FEEDING.*

By LOREN B. T. JOHNSON, M. D., Washington, D. C.

I make no apology for the introduction of this much discussed subject to-night, for we have all seen the wonderful results following the general acquiring of exact knowledge in regard to it by the profession. No longer is it the custom of the majority to prescribe half and half or one to three mixtures and let it go at that; but the physician is gradually appreciating the fact that infant feeding is a science by itself and is to be studied as such. Two modern developments have conspired to force these facts on our attention—first, the growing tendency of women to be unable to nurse their babies; and secondly, the poor milk supply with which we are forced to contend, and resulting therefrom, the growing belief that infants bottle-fed have almost as good a chance as their more fortunate breast-fed brothers and sisters when the milk supply is absolutely good and when the food is properly prepared for each individual digestion.

Holt says that an average society woman who can nurse her baby for a year is a phenomenon and not more than 25 per cent. can do so for more than three months. Rotch says that out of 665 women, 182 were able to nurse their infants and 483 were not. Of eight cases which have come under my observation this winter, one

* Read at a meeting of the Medical and Surgical Society of the District of Columbia, February 4, 1904.

was able to nurse her baby for four months, two for two months and the rest not at all. This state of affairs has forced us into the necessity for feeding either by bottle or wet nurse. It is true that a larger number of bottle infants die during the first year than breast-fed babies, but that proportion is growing less each year as our knowledge increases. Of course this mortality in favor of bottle-fed children cannot be laid entirely at the door of improper combinations of fat and proteids, but is helped out very materially by the poor quality of the milk furnished. And in this connection a striking evidence of this is furnished by the health officer's report of the District of Columbia, in which it is noticed that the mortality of white children under 12 months of age is much less than for colored children of the same age. Possibly we may argue from this that the average white child has access to a better milk supply, more intelligent care of its body and also more intelligent preparation of its food.

When the mother is absolutely unable to nurse her child after every effort has been made to do so (for, of course, the mother's milk is the ideal food), we are face to face with three alternatives—the wet nurse, patent foods, or the milk of some mammal. I am afraid that I shall be accused of heresy when I make the statement that the field of usefulness for the wet nurse has very largely passed. The great argument in favor of the wet nurse is that she supplies human milk, and that is certainly a cogent argument. But, on the other hand, we must remember that to get a wet nurse whose baby is just the age of our patient is quite a difficult matter; and certainly a new-born baby should not be put to the breast of a woman whose baby is six months old, for human milk changes from week to week; it must, to meet the demands of the growing child, be fed by a wet nurse whose own child corresponds to the age, etc., of the child she is employed to nurse; for what suited a six months' baby would kill a week-old infant. When we consider the class of women who make up the wet nurse fraternity—how completely their lives and habits are changed by the new environments, which must have a distinct influence on their milk! What domestic tyrants they may become, no one daring to contradict or reprimand them, for fear of turning their milk to gall or stopping it altogether! And most important of all when we consider our modern in-

formation on the science of substitute feeding, and that the laboratory, with its clean, exact methods, has arisen amongst us, it seems to me that we must very largely relegate the wet nurse to the days of ignorance and poor milk supply. Of course where good milk cannot be obtained nor correctly modified the wet nurse still has her field.

There is only one favorable word to say for the best of the patent infant foods, and that is that they may be used advantageously for a short time in an emergency. The extended use of infant foods is to be discouraged, for, from the very fact that they one and all contain very little fat, the child is immediately a candidate for scurvy or rickets.

In a series of 379 cases of infantile scurvy gathered by the American Pediatric Society, in 1898, the following interesting facts were obtained: Children fed on

Breast milk—12 cases.

Raw cow's milk—5 cases.

Pasteurized milk—20 cases.

Condensed milk—60 cases.

Sterilized milk—107.

Proprietary infant foods—214 cases.

It is true we see pictures of beautiful fat babies who have lived on infant foods, but that plumpness is caused by the excessive quantity of carbohydrates, which does make them fat; but then muscles and nerves have neither tone nor strength and they usually end up badly. In reference to that class of infant foods which require their addition to a certain proportion of milk, I fail to see any advantage over using milk alone, except the possible one by which the casein curd of cow's milk is softened and thus made more easily digestible by the combination of Mellin's Food, for instance, with milk. This curd is a very important feature of substitute feeding and will be considered later. It has been suggested that the milk of other animals might be used, but in the ass and mare, while the percentage of proteids is more like the human milk, they are both deficient in fat, while the goat has an excess of both fat and proteids. The advantages of cow's milk for substitute feeding are numerous. It is cheaper, more easily obtained, more easily modified and better adapted for the baby in the long run than any other method. I think I may assume, then, that cow's milk—pure, fresh and from some intelligent dairyman—is the proper basis for our babies' food. A baby whose digestion has

been all upset by curious compositions is much harder to feed than one who is started right. The majority of infants are born well, with healthy digestion, and it is our duty to keep them well, and a physician is just as much to blame for allowing an infant's digestion to go wrong, through hazy ideas of what that particular child needs, as he is if he prescribes an over-dose of medicine. The first point to consider in substitute feeding is that by no possibility can we make cow's milk human milk by simple dilution, for though we may get the total proteids down to what they are in human milk, the fat percentage is lessened. It is true that this may be raised by the addition of cream, but in such modification, which will answer for older children, we fail to appreciate the difference between human proteids and cow proteids and it is this particular feature which must absorb our attention.

The principal difference between human and cow's milk with which we are concerned is the greater percentage of proteids in cow's milk, and it is the casein elements of the proteids which forms the pivot around which all our efforts of milk modification for new-born infants should revolve. The casein in cow's milk is present in seven times greater quantity than in human milk and forms a tough, indigestible curd, which is the cause of nine-tenths of our trouble with infants' digestions, while the whey proteids, in cow's milk, which form no curds but are held in solution in the stomach and so absorbed, are present in only one-fourth the quantity which are present in human milk. So our constant effort is to give the child plenty of proteids in the form of lactalbumen and lactoglobulin, which go to make up the whey proteids, and limit the quantity of casein until the digestion can stand it. The milk laboratory here comes to our aid, and by an extensive system of formulas it is able to split the proteids in any manner we desire, and it is my effort usually to start a child on a caseinogen 25 per cent. and whey proteids 25 per cent. mixture, gradually increasing the latter up to 1 per cent. and then the former as fast as the child's digestion can stand it. The only two objections that I know of to feeding a baby with percentage feeding is the difficulty of remembering extensive formulas and the expense. Now, by the aid of the laboratory the trouble encountered in calculating percentages is entirely done away with, and all we have to do is to write a pre-

scription just as we would to a drug store—for instance,

Fat	2.
Whey proteids .....	.25
Caseinogen .....	.25
Sugar	7.
Alkalinity	5.

Ten feedings two ounces each, and then by increasing or lessening the different constituents according to the baby's symptoms, we can mould any particular digestion as we would a piece of clay. I think that in this connection a very important feature of infant feeding is in place, and that is, when an infant's digestion is completely upset by a wrong combination of fats and proteids the tendency is to lessen the amount of proteids a little, and if that does not cure lessen the fats, and then lessen the proteids again, until after some weeks we have a food which the baby can digest. How much better it is to cut off the food entirely for a short time, substituting barley water, and then beginning with a much weaker mixture and gradually working up, instead of gradually working down. I think another common mistake is to think that every bottle-fed infant should have two good stools every day, for certainly the evidence would go to show that the tendency is to constipation; and I certainly think that more harm is done to infants by continually giving enemas and cathartics when the bowels do not move every day than is done by allowing them to go every other day or every third day, because if the food is right and the baby is healthy, certainly the bowels will move as often as is necessary and will soon get to moving to the mother's and physician's satisfaction. And this may often be accomplished by increasing the fat a little, or by the addition of a little oatmeal water to the food. But the proper food, plenty of exercise, the wearing of binders, and abdominal massage is worth more to the infant's present and future health than all the enemas and cathartics in the world.

Now, to refer to the expense of the home modification of cow's milk. There is a very small initial outlay, and certainly a pint of cream a day is within the resources of those who cannot afford the laboratory rates. If our patient cannot get her milk from the laboratory, the physician's task is harder only in so far that he must remember a very few facts.

Every author has his own formulas; it is only

necessary to choose from the list presented a good one and follow it through with all our infants. Those given by Holt are simple and easy of adjustment. He recommends a 10 per cent. cream as the basis of operations, and this may be obtained by allowing a quart of 4 per cent. milk to stand for about eight hours and removing the upper third. His plan is to make a 20 oz. mixture for a new-born infant containing 2 oz. of 10 per cent. milk, 1 oz. sugar, 1 oz. lime water, and 16 oz. of water. In this mixture we evidently have 1 per cent. fat and 33 per cent. proteids, for it has been developed by experiment that in a 20 oz. mixture the proteids are just one-third the fat when 10 per cent. milk is used, and that the percentage of fat is always just one-half the amount of cream used. A child may be carried along until it is 3 or 4 months old on this series, when it becomes necessary to increase the percentage of proteids, which may be done by using the next series, in which a 7 per cent. milk is used, which may conveniently be obtained by using the upper half of a quart of 4 per cent. milk having stood 8 hours. We can do so by changing to the second series, where we only have to remember that in a 20 oz. mixture, the fat is just 7-20, or about one-third of the number of ounces of 7 per cent. milk used, and the proteids are just half the fat. With this series a healthy infant may be carried up to about nine months of age, when the proteids should more nearly equal the fats, which can be accomplished by taking whole milk and using simple dilution.

Time forbids going into the cases of very difficult feeding, but it seems to me that nearly every infant if started right can be carried along successfully all through its first year on these three series. I think that one of the greatest mistakes made by nurses and mothers is to be influenced by every bit of curd, every loose or constipated movement, every tinge of green in the stool to immediately change the food, and if left to themselves and told to go on adding a little to the strength from time they get hopelessly off the proper combination and a fresh start has to be made. If the child is gaining four or five ounces a week, what matter if it does have five or six movements a day? Suppose they do contain greenish curds, or suppose the bowels do only move every third day—that is surely not an indication for changing the food, when increase in weight, strength, vitality

and contentedness of the baby show that everything is all right. Leave the food alone and everything will come right in a short time, and if it does not after several weeks, then is the time to interfere.

We have passed the stage where it seems proper to fill the baby up until it runs over to be sure that it gets enough; and when you are trying to feed some baby scientifically, how often have you had to contend with the grandmother's prejudices against all these modern ideas! Her children always regurgitated after meals, they always had colic, they never had normal stools, but they grew up into healthy men and women; so what is the use, they say. But that question you answer when the little one never regurgitates, never has colic, stools are good, and the health and happiness of the baby stares them in the face, bringing up in hopeless contrast the sleepless nights, the anxiety and the unhealthy babies of thirty years ago. Wherever a bottle-fed baby's digestion is brought from chaos into order by modern methods of feeding, in that home, at least, is raised up converts to the new idea.

Another cause for a great deal of unhappiness in infants is over-feeding. Every time a child cries, it is not necessary to give food. It is certainly true that more children are over-fed than under-fed, and the great tendency is for the nurse to give food oftener than ordered just to quiet the child; and how often have you all seen a baby three months old getting 8 oz. at a feeding and not happy on it, either? A safe motto to follow is to keep the quantity and quality of the milk just a trifle back of what the child wants, if this can be done, and still have the weekly weighings show gains, and it can. When it seems necessary to increase the food, this is best done by increasing one constituent of the milk at a time—as increase the fat one day, several days later the proteids, and still later add a quarter of an ounce of milk to each feeding. Never add everything at once.

I have not been able to go into this subject in detail, but have merely set down some scattered thoughts which have occurred to me during a very limited experience, with the hope that I may learn a great deal about this subject from the rich experience of those who have had boundless opportunities for study and thought in this field.

924 Seventeenth Street, N. W.

Unique Cases—(1) Gauze Sponge Used in a Laparotomy Passed by Bowel; (2) Bowel Ruptured Some Time Before Appendectomy—Recovery; (3) Rupture of Hepatic Abscess Through Diaphragm into Lung—Recovery Without Operation; (4) Sloughing Off of Cervix Uteri and Lacerated Uterus.*

By JOHN W. DILLARD, M. D., Lynchburg, Va

I will ask your indulgence for only a short time, while I give you a synopsis of four unusual cases.

(1) Two years ago Mrs. Mahone, of Virginia, was referred to me by Dr. C. B. Young, of Lynchburg. I found her suffering from ovarian disease, which, upon operation, proved to be a dermoid cyst of large size and very extensive adhesions. This patient was not in a good condition and bore the anesthetic badly. The operation in itself revealed nothing worthy of your special attention. After this was over and before the peritoneum was closed, I asked my assistant and nurse, both of whom have had large experience, to carefully look and see if all sponges, pads and instruments were in place. They together counted these things, and replied that they had them all. The abdominal wound was accordingly closed and patient put to bed in a fairly good condition, save shock, which was greater than usual in such cases.

She did well for the first five days, with no very irregular symptoms. After this time, however, her temperature rose to 101°F., with a pulse 120. In this condition she practically continued for three weeks with no particular reason that I could detect to account for the rise of temperature and of rapid pulse. After this time the temperature fell to 99°, pulse 100, patient comfortable, expressed herself as feeling that she would get well, and this improvement continued for ten days, at the end of which time she was taken in a carriage to her home, a mile distant. She stood the trip without inconvenience.

On the next day, however, she was worse, rapid pulse, temperature 102°F., nausea and diarrhoea. This line of symptoms continued for two weeks until the patient was greatly worn and exhausted. Just at this time there was marked diarrhoea, patient saying that she could not evacuate the bowels unless allowed to sit up.

This was allowed, and in this position the bowels moved very copiously; patient felt relieved and was put to bed. An examination of the evacuated contents proved that a gauze sponge had been left in the abdominal cavity, and was the cause of this long and tedious recovery, notwithstanding every precaution that I had taken to avoid this unfortunate occurrence. Her recovery was complete, and at this time she continues in good health.

How this globular, soft, foreign body could have made the remarkable feat of passing from the peritoneal cavity into the bowels, and back into the world as it did without more serious results I will leave you to determine for yourselves.

(2) I was called to see Mr. C. B. on Monday morning, September 14, 1903, who was suffering with pain mostly at the umbilicus. The abdomen was swollen, the muscles rigid, great tenderness over the whole of this region, but not especially marked at McBurney's point. Temperature 101.6°F., pulse 80, respiration normal, tongue negative, expression bad, had slept very little the night before. Patient commenced vomiting at 12 o'clock on the same day a greenish offensive fluid. This continued without an interval of half an hour for thirty-six hours.

The following morning, Tuesday, I was called to see him early; found him with temperature 95.8°, pulse 88, breathing shallow, and whole surface bathed in a cold perspiration. Patient continued in this state of collapse with temperature unchanged until 5 o'clock of the same day, when temperature reached 99°; the pain in the abdomen and vomiting kept about the same except at this time the vomitus became stercoraceous and kept up this character until 10:30 o'clock Tuesday night.

Wednesday morning patient was found much improved. Would not consent to operation during attack.

Appendectomy was performed two weeks later, revealing the following condition: Appendix unusually long and bent on itself at an acute angle with adhesions very extensive. The appendix was also found to have ruptured, but the rupture had been caught against the iliacus internus muscle and became tightly adherent, thereby preventing any of the intestinal contents from escaping into the peritoneal cavity. Patient made a good recovery.

In this case, which was a very trying one, I

* Read before the Tri-State Medical Association of Virginia and the Carolinas during its session at Danville, Va., February 23-24, 1904.

had the counsel of my honored friend, Dr. R. W. Martin.

(3) Mr. C. H. L., of Nelson county, Virginia, was referred to me by Dr. J. E. Vaughn, of my town. Patient forty-five years old, of healthy people and with no specific history. Examination revealed an enormous hepatic abscess. Patient was sent to hospital for an operation on the following day. Early next morning I was called to see him and found the patient's abscess had ruptured through the diaphragm and into the right lung. No operation was performed and patient made a good recovery after expectorating enormous quantities of very offensive hepatic abscess pus for one month.

The only cause that could be ascertained for this abscess was an attack of acute appendicitis, which occurred about two months before the formation of the abscess, as the patient had never lived out of Virginia and had never had dysentery, fever, or any other disease likely to cause hepatic trouble.

(4) Mrs. B., of an adjoining State, age twenty-eight years, primipara of good form and health, was taken in labor and delivered instrumentally thirty-six hours afterwards of a large still-born child. The instrumental delivery must have been very difficult, as the patient was under chloroform for that purpose a long time. The delivery was followed by puerperal septicemia and phlebitis of both lower limbs, but made a slow recovery and was brought to me to have her perineum and cervix repaired. To my surprise, I found on examination that this patient had absolutely no cervix, the whole neck having sloughed off, or in some other way caused to disappear, and the anterior wall of the womb had been lacerated for an inch and a half up behind the bladder.

807 Church Street.

ASEPTIC TECHNIQUE IN OBSTETRICS.*

By JOHN EGERTON CANNADAY, M. D., Paint Creek, W. Va.,
Superintendent and Surgeon-in-Charge Sheltering Arms Hospital, etc.

The subject matter of this paper embodies nothing new, nothing in the way of laboratory research, or of clinical report. I should, perhaps, beg the indulgence of the members of the

* Read before the Kanawha County Medical Society, at Charleston, W. Va., February 16, 1904.

Society for the presentation of a paper so elementary in character, so commonplace in its application, and yet every day we hear of or see the importance of keeping ourselves reminded. The point I have endeavored to emphasize is the value of aseptic procedures in obstetric service.

In the parturient tract we have more or less surface denuded of its protective epithelium; we have tears and lacerations, devitalized tissues and blood clots. What happier field of action for the wily and ubiquitous microbe? Hence the urgent necessity of treating each and every case of obstetrics as if it were purely surgical in nature.

There is in life a general tendency to carelessness and laxity of methods; it is innate. One may begin with high ideals and find himself by gradations, fast or slow, dropping into a rut readily, pursuing slipshod methods, and allowing a habit to fasten on him that is difficult to shake. We easily make for ourselves excuses such as these: "too tired," "haven't got the time," "patient isn't worth the trouble," "it is less trouble to leave out this or that and maybe she'll get on just as well anyhow"—all apparently extremely plausible at the moment.

It was Thomas Keith who said: "It is unfortunately a melancholy story that ever since surgery began, the most of the mischief was done by the surgeon himself. It was the willing and tender, though unclean, hand that carried poison into the wounds. And this is eminently true of obstetric practice.

Every obstetric case is an open door to infection, and it behooves the attendant to be sure that he does not furnish the poison. While we may not in many cases be able to carry out the refinements of the science as elaborated by Edgar in his recent encyclopædic work, we can at least bear in mind the principles so earnestly enunciated by Semmelweis and our own Oliver Wendell Holmes—poet, lawyer, doctor that he was, and remember how with burning words they inveighed against the filthy methods in vogue in their day and generation. Then the physician answered his obstetric call fresh from the post-mortem room. Even now some mix pus and scarlatina, erysipelas and obstetrics in the even round of twenty-four hours.

To be efficient in all cases, in the mansion or the hovel, with a properly trained nurse and medical assistance, or by your lone self, the method used must have simplicity—not complexity—to commend it.

For several days prior to labor the mother should have light diet, mild laxatives, a daily warm bath, the last repeated at the onset of labor; and a good sized soapsuds enema about the beginning of labor. In the most tumble down shack, one can get fire and water; with these two you can sterilize instruments. Cotton, gauze, towels, etc., can be sterilized beforehand and taken with you. Vessels such as pans may be sterilized by boiling water in them; by using one inverted as a cover you purify one by steam, the other by boiling water. Douche bags may be boiled or they may be disinfected with mercuric bichloride after the application of soap and hot water. Water can be boiled and set aside to cool for solutions, etc.

For the hands the potash soap, scrub brush and hot water of Lawson Tait followed by a bichloride bath are ample.

As a safeguard against infection the number of vaginal examinations should be reduced to a minimum, and abdominal palpation be largely practiced in determining the presentation. Meddlesome interference with the normal course of labor should be discountenanced.

Before the vaginal examination, the inner surface of the thighs, the entire genitalia down to the actual vaginal opening, should be cleansed thoroughly with liquid antiseptic soap, warm sterile water and pledgets of cotton or sponges of gauze. All wiping should be done downward; secondly, sponge with fifty per cent. alcohol; and lastly, with warm bichloride solution. A towel wet with the latter solution should then be laid over the vulva. During the examination, if possible, get some one to separate the thighs and uncover the parts; with the thumb and fingers of one hand separate the labia, when the index of the examining hand is inserted. Use lysol or sterile vaseline as a lubricant. This combined process of hand and genital disinfection is to be repeated at each subsequent examination.

The mother's hips during labor should rest on a sterile pad, especially prepared for the occasion. In event of that not being obtainable, a sterile towel will suffice.

Believing the teaching of Kronig, that the normal microbic flora of the vagina are non-pyogenic, I would abolish the antepartum douche, unless of course, some infection, as gonorrhœa, etc., is suspected.

During the progress of labor, I would emphasize the importance of avoiding instrumental or

drug interference of pursuing a waiting policy and allowing nature so far as practicable to pursue her course unruffled.

As regards the placenta, I would wait for at least three-quarters of an hour before beginning the method of Crede. By attempting to hasten matters some part of the placenta may be left behind to do mischief or more or less infection may be introduced.

The perineum should be carefully examined, the extent and nature of injuries noted, and the lacerations, though small, repaired; for by so doing you may prevent prolapses and all the miseries they may entail. When cervical tears are extensive and the obstetrician is prepared to carry out a rigid surgical technique, I say repair them, avoiding the necessity for future operations, miscarriages, sterility, and possibly doing a prophylactic procedure as regards cervical carcinoma. But if aseptic principles cannot be obtained and maintained throughout this seemingly trivial operation, then far better leave the matter to the devices of nature.

It is quite important that the sterile perineal pads be changed often, and the vulva as frequently cleansed in an aseptic and non-meddlesome manner. The person ignorant of the principles of bacteriology and sepsis may be taught to cleanse the vulva and perineum by pouring on them water that has been boiled and allowed to cool. In case there has been a perineal tear, and this has been sutured, the frequent cleansing of the lesion with warm saline solution or weak bichloride, or both, is of paramount importance. It is well, perhaps, for us, generally speaking, to view the genital canal as a sort of *noli me tangere* after the birth of the child. It is worth our while to take the trouble to make an earnest endeavor to impress on the attendant the great importance of surgical cleanliness.

The devotion of time and thought and study to the perfection of a technique in such matters will amply be repaid in bettered results and the satisfaction of work well done. I would say in passing that when we do more knife and fork surgery and less fingering of wounds, the deviations from the normal will be fewer in number and the amount of pus produced will be materially lessened.

As for the cord, I ligate with heavy silk, which sinks into its substance and is a better preventive of secondary hemorrhage than tape. I cover the cut end with a piece of sterile gauze until the vernix caseosa has been removed by a

bath, then dress antiseptically with gauze and a dusting powder. With the idea of preventing infection, I dispense with the plunge bath until the stump has dropped off.

I have endeavored to rehearse some simple principles and their methods of application for the reason that they are worth the while.

SOME UNAPPRECIATED USES OF THE X-RAY.*

By ALFRED L. GRAY, M. D., Richmond, Va.,

Professor of Physiology and in charge of the X Ray Department
University College of Medicine, Richmond, Va.

It is not my intention in this brief paper to introduce into the realms of radio-therapy or radio-diagnosis any innovation, but merely to call the attention of the profession generally to some of the more unusual purposes to which the X-ray may be applied, that are fully as important and equally as valuable in the field of diagnosis as those of every day usage.

There are no means at our disposal, as is now well known by all of us, that can compare with the Röntgen rays in the diagnosis of diseased or injured bones, the location of foreign metallic bodies, calculi, etc. But how few of us make use of this most convenient and accurate method of determining the existence of certain pathological conditions in the soft structures? It is as a plea for the more frequent use of the rays for this purpose that this paper is intended.

There is scarcely one of the many serious diseases affecting the thoracic viscera concerning which the skilled employment of the X-ray does not furnish additional valuable information. Many pathological conditions existing within the abdomen and its walls may also be accurately diagnosed by this means.

Probably the value of the X-ray in the diagnosis of thoracic aneurism is the most widely appreciated of the uses to which it is my desire especially to call attention. The importance of this means of diagnosis of this often, most obscure and sometimes otherwise undeterminable condition, cannot be too strongly emphasized.

The frequency of the existence of this disease is far greater than is generally believed, and

often will it be found that prolonged hoarseness, intractable coughs believed to be due to chronic bronchitis, and many other chest symptoms are in reality due to the presence of thoracic aneurism. Within the past six months I have discovered aneurism in five cases that were referred to me with no positive evidence of this condition existing.

The diagnosis is simple and unmistakable, and is best made with the fluoroscope, save in case of very small tumors, for the pulsations may be readily seen in this way, whereas the radiograph may not distinguish this from other tumors within the thorax.

The second use to which I would call attention is in diseases of the lung. By means of the radiograph, areas of consolidation too small and deep-seated to be detected by a physical examination, may be readily demonstrated and thus a circumscribed pneumonia or beginning phthisis may be diagnosed. By comparison of radiographs taken from time to time we may watch the progress of the disease and may note any increase or diminution of the diseased area.

Cavities may be readily detected and located and the presence or absence of an abscess ascertained.

The radiograph will easily demonstrate pleuritic effusion, empyema or pneumothorax. Hypertrophy and dilatation of the different chambers of the heart may be plainly shown, and in some instances atheroma of the aorta has been found.

Much valuable information may likewise be obtained from examination by the rays of the abdominal contents; though this is usually much less satisfactory than chest work.

Abscesses of the liver and other abdominal viscera, if they are of considerable magnitude, may readily be shown. By a radiograph alone, I was enabled to discover a case of atrophic cirrhosis of the liver and subsequent clinical evidence verified my diagnosis.

Splenic enlargement and in some instances hypertrophy of the kidney can be detected.

It is claimed by some radiographers that they have, with the latest improved apparatus, been able, by short exposure, to photograph not only the normal kidney but also the pancreas. I have not succeeded in obtaining a satisfactory picture of either of these organs when normal.

Abdominal and pelvic tumors may often be found and their nature practically ascertained.

Still another fact that may be of inestimable

* Read at the sixth annual meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Danville, Va., February 23 and 24, 1904.

value is that coagulated blood is more or less opaque to the rays. By reason of this we may not infrequently locate an intra-cranial clot, thus enabling the surgeon to proceed with its removal with certainty as to its whereabouts.

I have recently made some exceedingly interesting radiographs of the roots of teeth in their sockets, showing their shape and condition, a correct knowledge of which is essential, especially in dental prosthesis.

In concluding, let me again disclaim any attempt at originality in any branch of this work, but if I shall, by this paper, induce the general profession to take advantage of these facts, well known to any up-to-date radio-diagnostician, I shall have succeeded in my undertaking.

901 E. Clay Street.

DANGERS OF THE X-RAY OPERATOR.*

By JOHN T. PITKIN, M. D., Buffalo, N. Y.

The Sequelæ of X-Ray Inflammation are—

(1) More or less loss of integument with its appendages, hair, hair-follicles (alopecia) nails, sebaceous and sudorific glands.

(2) Disfigurement of parts involved, such as hands, face and head, by scars, pits, warts, pigmentation, baldness, a shave that requires no repetition, skin diseases, etc.

Small cicatrices form at the labial commissures, drawing the angles of the mouth downward, giving the operator a sad expression of countenance. Dr. Wagner, of Chicago, suffers with disfigurement of the face. A French operator is reported to have nearly lost his nose. Clarence Daily (case to be reported later) has scars upon his face and loss of hair. One entire hand and four fingers of the other have been removed. Dr. Early, of Dayton, O., has lost one finger. Dr. Kassabian has many small scars upon his face. Pigmentation has rendered his face much darker than its normal condition. A light streak separates the pigmented portion of his features from the hair of his head, giving him somewhat the look of a person wearing a mask. Girdwood, Grubbe, Kassabian, Skinner, Price, Waite, Platt, Detwiller and about one-third of the prominent operators and

instrument dealers well known by the writer have hands which have been more or less severely injured. Blacker (case to be mentioned later) has gone on "the long journey to that bourne from which no traveller ere returned."

(3) Chronic scaly skin diseases and other conditions of the parts result because some of those little functionaries—the sweat and oil glands, that have moistened and lubricated your skin from the days of your inception—are gone forever.

(4) Horny papillary thickening of the ends of the fingers, beneath and around deformed nails, crowding the nails away from their matrices. Horny ridges, lumps, nodules, warts or callous in other localities. Some of these formations mark the site formerly occupied by inflammatory mounds. Most of these formations can be softened and stripped off, but they usually form again in the same places. Their subsequent degeneration into cancer will be considered later.

(5) Purpura hemorrhagica and punctate clots in the newly formed skin. The bleeding probably comes from the nutrient arteries of the defunct follicles.

(6) Erythema, either circumscribed in small irregular spots in the skin and beneath the nails or diffused over the entire surface.

(7) Hyperæmia or anæmia, usually the former—the latter being confined to circumscribed areas.

(8) Pigmentation or blanching of the tissues, either temporary or permanent. The surface may be left with a pigmented border and white center. Dr. Pancoast has shown us how the denizens of "darkest Africa" can be whitened.

(9) Hyperæsthesia to all forms of radiant energy and traumatism. This condition slowly decreases.

(10) Increased vaso-motor activity.

(11) Diminution or loss of the sense of touch in circumscribed areas. This sequel is rare.

(12) Small abscesses at the roots of the teeth (rare). See report of such a case Philadelphia meeting.

(13) Temporary decrease of sexual power.

(14) Erratic or redundant growth of hair. See reports of Dr. Girdwood and others.

(15) A tendency to spasmodic muscular contraction and œdema, or rheumatoid symptoms.

Secondary, tertiary and quartanary dermatitis.

From careful observations made upon pa-

*Conclusion of article by same author in the February 12, 1904, number of this journal.

tients and myself I conclude that each attack of X-ray inflammation leaves the parts more predisposed to subsequent attacks. Consequently, after several repetitions from a given volume, strength, tension, and duration of exposure, the period of incubation decreases, while the inflammation developed will be more and more intense. One hand of the operator may develop dermatitis in a few days, while the other, which has been less frequently or less severely attacked, requires a week or more for its appearance; the former will be severely, the latter slightly affected.

Even the different fingers of the same hand may have a different period of incubation and degree of reaction according to their relative susceptibility. After repeated attacks, the period of incubation may be entirely wiped out, the reaction with a sensation of warmth or stinging and an inflammation more or less profound taking place immediately.

Conversely, a period of rest from raying, limitedly, decreases susceptibility.

Why the hands are so frequently injured and why upon the dorsum.

(1) They are not protected by clothing.

(2) They are usually a little nearer the tube than other portions of the body, dorsum outwards.

(3) It is a common practice with operators to employ the hand in front of the fluoroscope with the dorsum presented to the tube as an X-radiometer, judging by the translucency of the bones, etc., the degree of penetration of the X-light.

When the operator is right handed he will instinctively hold the fluoroscope in that member; consequently the left hand will, in the course of time, be more seriously injured. The reverse is true if left handed. When ambidextrous, both hands will be nearly equally affected.

Other dangers of the X-ray operator.—Impairment of vision. At the Chicago meeting of this Society, Dr. Scott, of Kansas City, reported that he had been so afflicted, attributing the same to the Röntgen rays.

Personally I am unable without glasses to read medium print, which I could do seven years ago, before I became an X-ray operator. I consider the X-ray more or less responsible, but the fluoroscopic, and dark-room work, not to omit the hand of time, have each contributed their quota to the impairment.

Mr. Thomas A. Edison reports that the focus-

ing power of one of his eyes has been lessened by the Röntgen rays.

One of my X-ray colleagues has a mild form of ophthalmia which he believes to have been caused by the rays. Withdrawal from their influence is always followed by improvement. Drs. Kassabian and Waite have been similarly affected.

Ophthalmoscopic examination of my eyes made during an X-ray inflammatory attack revealed a deficiency of pigment in the choroid. The pupils of my eyes were small, and there were indications of presbyopia, such as inability to focus perfectly the chrySTALLINE lens for near and remote objects. Vision at thirty or forty feet was a little blurred and indistinct. This defect was overcome by distance glasses, but since my recovery such glasses are no longer required. I saw minute moving bodies upon the window pane, showing irritation of the retina.

The effects of the Röntgen rays upon the generative organs.—When the X-ray operator has a mild but general attack of dermatitis the reproductive organs will darken. The hair over the symphysis pubis may or may not be thrown off. There will be desquamation of the scrotum and glans penis, although an investing foreskin of the penis may not be affected. The sexual power will be temporarily last. (See report of experiments made upon the spermatozoa of rabbits. *American Röntgen Rays Society*, Philadelphia.) The urine contains no albumin.

Collapsing of Crook's tube and cutting of flesh by the centrifugal flying fragments of glass.—This accident occurred to Dr. King, of Bradford, Pa., and was reported in *The American X-Ray Journal*, July issue, 1903. The entire subject, including the danger to the eyes of the operator, has been considered by my predecessor, Dr. Pancoast.

Possible but not probable results of oft repeated and long continued exposures to the Röntgen rays.—At the Chicago meeting of this Society, Dr. Grubbe reported that two patients whom he treated became deranged. One of my patients developed a violent form of insanity with delusions and hallucinations; another was troubled with amnesic aphasia and attacks of dyspnoea. Both patients had been subjected to a long course of treatment for severe forms of carcinoma, and were of the nervous temperament. Both cases terminated fatally.

Can the X-rays, like the solar rays, cause

structural changes in the cerebrum, leading to derangement of the mental faculties? or do the ptomains from cancerous disintegration sometimes cause so profound an auto-infection as to bring about such psychical disturbances? Should you answer my primary question affirmatively, then it follows as a corollary that the danger to the patient is in a measure shared by the operator, and solaroidal effects can be anticipated.

Infection.—The abraded tissues of the X-ray operator afford a fruitful culture field for infection with chronic malignant diseases with which his patients suffer. His office is thronged with patients suffering with some of the vilest diseases that flesh is heir to.

Cancer.—In the Associated Press report of August 3, 1903, appeared the following: "One of Thomas A. Edison's X-ray operators, named Clarence Daly, who had used the X-rays for several years, is to-day a physical wreck. Cancer broke out on both arms, one of which was amputated, and four fingers of the other hand had to be removed; his face is wrinkled and his hair fallen out." In a personal letter received from Mr. Edison, he assures me that this report is true.

I quote the following apropos from the *Electro-Therapeutic and X-ray Era*, Spetember number, 1903: "The premature demise of an English physician from malignant disease is alleged to be traceable to an X-ray accident. Blacker suffered a severe burn on one of his fingers while manipulating the apparatus. This irritation produced an unyielding dermatitis, which rapidly ascended the arm. Cancerous disease of the skin now appeared at the elbow, and evidences of malignancy were soon perceptible in the axilla. The disease finally involved the entire shoulder, the progressive character of which precluded operation."

For other cases illustrating this danger, I refer you to the current literature dealing with the subject, rather than weary you with further quotations.

In order to throw the search-light of investigation upon one of the etiological factors of cancer, I will inquire of a patient who has that disease upon the forehead what was the cause? She replies, the sting of a mosquito.

I ask another suffering with epithelioma of the lips and cheek the same question, he says a cut from a barber's razor.

Still another with osteo-carcinoma of the bones of the face, says he was struck with a stone.

A patient with one-half of his face involved, fell upon a plank that cut his lip. Cancer subsequently developed in the cicatrix.

A lady with scirrhus of the breast, and a metastatic focus on the face, believes the primary lesion to have been caused by falling against a bedstead.

In other words, slight injuries to epithelial tissues, in accord with the teachings of Conheim, the German savant, often prove a potent cause of cancer. Is it strange, therefore, that X-ray inflammation, with its specific action upon this variety of tissue—be it physiological or pathological—should very rarely cause a cancer in an operator having the cancerous diathesis, by degeneration of the horny ridges, nodules, warts, cicatrices, etc., left as sequelæ, or a retrograde epithelial metamorphosis superinduced by the inflammatory process?

Patients subjected to a course of X-ray treatment of over one year's duration, who are not thoroughly shielded from the action where not required, may become emaciated; the parts exposed may have eruptions, œdematous swelling and spasmodic contraction (slight) painful or otherwise. This danger is limitedly shared by the operator.

The rays have been accused of causing headache, indigestion and other disturbances of the stomach and bowels, sore throat and symptoms like those produced by a mild sun-stroke by different operators and writers, some of which I have previously mentioned in the context. That all of these conditions may and do exceptionally result I have good reasons to believe.

Preventive measures.—In view of the multiple dangers that beset the X-ray operator, I have adopted the following precautions:

(1) Never allow the use of any portion of my body for others to look through.

(2) Never change the adjustment of a tube or position of patient while the apparatus is in operation.

(3) Never use the hand in front of the fluoroscope as an X-radiometer.

(4) Never allow the strong destructive rays in the center of the field to shine upon my person.

(5) Wear the safety X-ray gloves invented by Dr. Price, of Cleveland, and of this Society. Silk or rubber gloves lined with foil are better than no protection.

(6) Wear glasses as an extra protection for the eyes against the rays and the disruption of tubes.

(7) Wear an office coat with extra long sleeves that come well over the backs of the hands, the skirt of coat to cover the hips, the entire garment lined with foil, or the Price material.

A safety fluoroscope can be made with a hood fitted over the trunk and attached around the margin of the distal extremity—the hood to be large enough to extend over the head, face and hand of the operator. A rigid flaring metallic plate can be fitted around the middle of the trunk of the fluoroscope on its outside, extending laterally therefrom and a thick piece of plate glass fitted to the inside of the removable end of that instrument.

(8) Not to excite the tube with a sinusoidal current, or what amounts to the same thing, overload the direct current with spark gaps and thus change it into the sinusoidal. A tube thus excited scatters rays in nearly every direction.

(9) Remain behind the target, the static machine or thick plate glass screens having metallic bases, through the glass of which I can observe all that is transpiring, or examine my patient, who holds the fluoroscopic screen, while I remain excluded from the X-ray field.

(10) If obliged to enter the field for any purpose, remain as far away from the excited tube, and work in the outer confines, as much as possible. Do what is required; then return to a position of safety immediately. Another good plan for self-protection is to screen yourself from such pencils of X-light as would come your way with a copper plate placed so that you can see the working of the other portions of the tube, or screen the entire tube and observe its reflection in a looking-glass. A combination screen and tube holder, to invest the tube on all sides, with a suitable aperture, for the egress of the rays can be made of very thick glass.

The new form of clinical adjustable tables, with a copper or sheet-iron covering nailed onto the wooden top, the top turned on end, make admirable impromptu screens for many purposes.

The foreign makes of tubes, said to be made of glass which is opaque to the rays except at a limited area, are worthy of trial.

Such precautions I now scrupulously maintain, for my recent experience with this subtle force reminds me of the words of Shakespeare given to the ghost of the erstwhile Hamlet, King of Denmark (paraphrased):

"My hour has almost come,
When I to sulphurous and tormenting flames

Must render up myself. * * * *
Doomed, for a certain term, to walk the night;
And, for the day, confined to fast in fires,
Till the foul * * * (unnatural condition) of
My body is burned and purged away."

Book Notices.

Progressive Medicine. Edited by HOBART AMORY HARE, M. D., Professor of Therapeutics and Materia Medica in Jefferson Medical College of Philadelphia, etc. Assisted by H. R. M. LANDIS, M. D., Assistant Physician to Medical Dispensary of Jefferson Medical College Hospital, etc. *Vol. IV, December, 1903.* Lea Brothers & Co., Philadelphia and New York. 1903. Cloth. 8vo. Pp. 444.

With the new year, 1904, the annual subscription price of this "quarterly digest of advances, discoveries and improvements in the medical and surgical sciences" will be reduced to \$6. Each volume will contain about 300 pages, abundantly illustrated, as heretofore, but will be divested of its heavy cloth binding. The series of these volumes forms annually a practical treatise covering the entire domain of medicine and surgery. In Volume IV, under notice, Dr. John C. Hemmeter reviews "diseases of the digestive tract and allied organs, the liver, pancreas and peritoneum;" Dr. Joseph C. Bloodgood brings "anesthetics, fractures, dislocations, amputations, surgery of the extremities, and orthopedics" up to date; Dr. Wm. T. Belfield records the advances in "genito-urinary diseases;" Dr. John Rose Bradford brings out points of advances in "diseases of the kidneys;" Drs. Albert P. Brubaker and Charles Harrington, respectively, write on physiology and hygiene. Dr. H. R. M. Landis gives a very excellent practical therapeutic referendum.

The Practical Care of the Baby. By THERON WENDELL KILMER, M. D., Associate Professor of Diseases of Children in the New York School of Clinical Medicine, etc. *With 68 Illustrations.* Philadelphia: F. A. Davis Co. 1903. Cloth. Small 8vo. Pp. 158. Price, \$1 net, delivered.

This is a unique book—beginning with the most elementary principles as if the mother and the nurse knew nothing as to the practical care of the baby, and then step by step going on until the untrained is taught to be in reality a

trained nurse for babies. It is profusely illustrated to show the incorrect and the correct way to attend to babies—even as to the changing of napkins. A section of good advice is given as to how to manage emergencies until the doctor can be got. It is a good book for the student nurse, and we are almost tempted to say that every mother should carefully learn the lessons taught in its pages. A number of good practical hints for the doctor are also contained in its pages. It is a book of every day utility.

Organic and Physiologic Chemistry. By ALEXIUS McGLANNAN, M. D., Associate Professor of Physiologic Chemistry, Instructor in Clinical Laboratory, College Physicians and Surgeons, Baltimore, Md. *Series Edited by V. C. PEDERSEN, A. M., M. D., Instructor in Surgery and Anesthetist at New York Polyclinic Medical School and Hospital, etc. Illustrated with 9 Engravings.* Lea Brothers & Co., Philadelphia and New York. Cloth. 12mo. Pp. 246.

This is one of the popular "Medical Epitome Series"—intended as "a manual for students and practitioners." The plan of the series compels simply a statement of facts without material discussion. For review purposes of students or graduates, questions are added to each chapter. The volume is divided into two parts—Part I, covering 175 pages, being devoted to Organic Chemistry, while Part II is taken up with Physiological Chemistry. This latter part will prove of value to practitioners, as it describes the chemical composition of such things as animal fluids and tissues—such as blood, milk, lymph, bones, muscles, etc. It also gives the chemistry of animal functions, as digestion, respiration; of the waste materials, as feces, urine, etc.; the chemistry of food and diet; of metabolism, etc.

The Blues (*Splanchnic Neurasthenia*)—Causes and Cure. By ALBERT ABRAMS, A. M., M. D., Consulting Physician to the Mount Zion and the French Hospital, San Francisco; formerly Professor of Pathology and Director of the Medical Clinic, Cooper Medical College, etc. *Illustrated.* New York: E. B. Treat & Co. 1904. Cloth. 12mo. Pp. 240. Price, \$1.50.

It is seldom that we find a book so full of continuous interest for the practitioner. All doctors have had cases of this heretofore indescribed variety of nerve exhaustion—characterized by paroxysms of depression, popularly known as

"the blues." The author refers its origin, in brief, to a congestion of the intra-abdominal veins, and the author asserts that no variety of neurasthenia is more amenable to treatment—according to the line of practical suggestions contained in this volume. Exercise of the abdominal muscles is a great help in removing the causative condition. Marked successes are recorded as the result of treatment—including the use of electricity, of massage, properly conducted exercise, medicines to meet special indications, etc. The work is well worth careful reading and study.

The Self Cure of Consumption without Medicine. By CHAS. H. STANLEY DAVIS, M. D., Ph. D., Physician to the Curtis Home for Old Ladies and Children, Meridian, Conn., etc. New York: E. B. Treat & Co. 1904. Cloth. 12mo. Pp. 176. Price, 75 cents.

This book expresses views in advance of the day. It presumes that typhus fever, Asiatic cholera, yellow fever, leprosy and small-pox have been practically stamped out, and assumes that there is not a shadow of doubt but that consumption can be practically stamped out. "There is no reason why any person not advanced beyond the second stage should die of the disease." No count is made in such a sweeping assertion of the numerous cases of abject poverty of the subjects exposed to the disease, and of the dense ignorance that oftentimes prevails among such classes, which make it practically impossible to carry out the directions given for the maintenance of health. The object of this book is to show how consumption can be cured in at least 95 per cent. of cases, and this without the use of medicine. It is the extreme view stated that is commented on—not that wonderful advances have not been made in the last twenty years as to the prevention of the disease and curing it in a large percentage of cases in the incipient stages. The book is worth reading because of its general good hygienic advice, etc.

The Pathogenic Microbes. By M. LE DR. P. JOUSSET, Physician to the Hospital Saint Jacques, etc. *Authorized Translation of* HORACE P. HOLMES, M. D. Philadelphia: Bœricke & Tafel. 1903. Cloth. 16mo. Pp. 192.

This very useful book, which may be read in a few hours successively, studies the different states under which the pathogenic microbe pre-

sents itself, and the functions and role it plays in pathology; the history of the toxins, anti-toxins and the alexines; after demonstrating the specificity and polymorphism of the microbes, the study proceeds with "the microbe in act, pathogeny, immunizing and therapeutic"; the different theories which aim to explain these acts are discussed, and then an expose of a general and bacteriological doctrine is given. Every page is instructive and entertaining to one interested in the study of bacteriological diseases, and their treatment.

International Clinics... Vol. IV—Thirteenth Series— 1904. Edited by A. O. M. KELLY, A. M., M. D., Philadelphia, U. S. A., with the Collaboration of *Twelve Eminent Practitioners*—four of whom are Europeans and two Canadians. Philadelphia: J. B. Lippincott Co. 1904. Cloth. 8vo. Pp. 321. Price, \$2.

The "quarterly of illustrated clinical lectures and especially prepared original articles on treatment, medicine, surgery," etc., by "leading members of the medical profession throughout the world," is a standard periodical—giving the latest and the best authoritative views on any of the subjects considered in each volume. Hence its value. The best way to use this book is to select a standard text-book on medicine, surgery, neurology, pediatrics, obstetrics, gynecology, or any of the usually taught branches of medical science, and on the proper page refer by pencil mark to the series, volume and page of this "quarterly" which treats on the same subject. Whoever does this will soon find that he possesses a most valuable series of collateral reading on the subjects so marked; and which brings his text-book constantly up to date.

Social Diseases and Marriage—Social Prophylaxis. By PRINCE A. MORROW, A. M., M. D., Emeritus Professor of Genito-Urinary Diseases in University and Bellevue Hospital Medical College, New York, etc. Lea Brothers & Co., New York and Philadelphia. 1904. Cloth. 8vo. Pp. 390. Price, \$3 net.

No one is better prepared than the author to write such a book. His eminence as a teacher, his experience as a clinician, and his multiplied opportunities for observation specially fit him for the task. He presents a work thoroughly authoritative as to the venereal diseases, which, with tuberculosis and the intoxicant uses of alcohol, opium, cocain, etc., constitute the modern plagues that afflict mankind. The book is di-

vided into 37 chapters—dealing with the dangers of venereal diseases before marriage and their consequences afterwards. It is a book that may be read alike by the laity and the doctor. After describing the various forms of dangers of venereal diseases as they affect marriage, he discusses the measures that should be used to combat the social evils, as follows: Administrative, employed by the State; sanitary, by the medical profession; and moral, by the clergy and religious teachers. The object of all these suggestions at preventive measures is to impress upon each individual the sense of wrong and of danger of illicit intercourse. The book, properly read by the better classes—whether professional or otherwise—will do much good.

Haematherapy as Applied to General Medicine and Surgery. By T. J. BIGGS, M. D. Cloth. 8vo. Pp. 574.

This is a uniquely published book—without even a title page. It records, in a classified form as to diseases, etc., the classes of cases in which bovine has been beneficially used. The book is published by the Bovine Co., New York.

Practical Treatise on Nervous Diseases. By F. SAVARY PEARCE, M. D., Professor of Nervous and Mental Diseases in Medico-Chirurgical College of Philadelphia, etc. *Colored Frontispiece. Ninety-One Illustrations in the Text, Many in Colors.* New York and London: D. Appleton & Co. 1904. Small 8vo. Pp. xxi+401. Cloth.

This is an excellent book—whether for the medical student or general practitioner; and if the promised "similar treatise on mental diseases" is written in the same terse yet clear style, and has illustrations as graphic as those in the book now under notice, the two volumes will form a long needed want as text-books and as practitioners books on nervous and mental diseases. The intricacies of the anatomy and physiology of the nervous system are as well explained in this work as it seems possible to do—cleaning up many doubts in the practitioner's mind as to how some effects of irritations or injuries at certain points are caused. When the author reaches special diseases, his descriptions are ample, the diagnostic points clear, and the line of treatment suggested good, and in accord with experience and observation. While the index—always a valuable part of a book of

this kind to the busy practitioner—is imperfect (not even mentioning epilepsy, etc.), such imperfection can be easily remedied. The subject is well treated in the six pages 289-295, inclusive. The publishers are to be commended also for the care they have taken in press work, etc.

Editorial.

Dr. Daniel's Sanatorium Not Recognized by Richmond Doctors.

It has just come to our knowledge that last September a letter was sent a North Carolina doctor purporting to emanate from "Dr. Daniel's Sanatorium—J. Sills Daniel, M. D., in which he names as "consulting physicians: Edwards, Garcin, Taliaferro, Upshur, Michaux—any, in fact, I choose to call." A more unfounded and untrue assertion could not have been made, even by one who adopts disreputable methods. No reputable regular practitioner of this city in good standing with the other members of the profession would think of being connected with the above mentioned institution in any capacity.

Meeting of Medical Society of Virginia, 1904.

The thirty-fifth annual session will be held in Masonic Temple, Broad and Adams streets, Richmond, Va., during the week of the "Horse Show" in this city. The session will be called to order at 8 P. M., Tuesday, October 18, 1904, which meeting will be open to the public as well as profession. After this, there will be no night sessions—but there will be morning and afternoon sessions on Wednesday, Thursday and Friday of that week. An attendance of between 400 and 500 doctors is expected.

Typhoid Fever Epidemic in Cleveland, Ohio.

During February, 465 new cases of typhoid fever were reported in Cleveland, Ohio; and on March 1, 1904, 51 new cases. The number of deaths from the disease during February was 45. The cause of the epidemic is attributed to the polluted drinking water obtained from Lake Erie. When one recalls the amount of boat travel on these lakes, with the enormous amount of fecal discharges, etc., from passengers—sick and well—and remembers the sub-

tlety of the bacillus typhosus, we are rather surprised than otherwise that like epidemics or endemics have not occurred in other cities deriving their drinking water supply from the lakes. The paper by Dr. P. B. Barringer, of the University of Virginia, on "an unappreciated source of typhoid infection"—referring to the travel and fecal deposits of passengers, sick and well, on the railroad beds of the country—read before the Medical Society of Virginia, at Roanoke, last September, and which has been widely abstracted in the journals of the country—is full of suggestive information relating to this subject.

The Panama Canal Commission Without a Doctor.

Whatever may be our views with reference to the manner in which the Isthmian Canal route has been secured, now that it is an ended piece of legislation, we regret to find that not one of the seven commissioners is a representative of the medical profession. It is a great mistake, in the make up of such commissions, that a leading member of the medical profession is not selected. In a great enterprise of this kind there must inevitably arise questions of health and sanitation and disease that no one is so competent to answer as an up-to-date doctor, whose personal standing and influences will secure the best of advice.

Obituary Record.

Dr. John S. Powell, Occoquan, Va.,

Died at the Alexandria, Va., Hospital, March 12, 1904, in his seventy-fifth year of age. He graduated in medicine from Jefferson Medical College, Philadelphia, in 1853. During the civil war he was first a member of the Prince William county cavalry, and later was commissioned as assistant surgeon in the Confederate army. Afterwards, he was appointed to the secret service department of the Confederacy, and served in this capacity until the close of the war. He joined the Medical Society of Virginia, 1884. Some years ago, he was elected surgeon-general of the Grand Camp of Confederate Volunteers of Virginia, which honor he held till his death.

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(APRIL, 1903—MARCH, 1904, INCLUSIVE),

VIRGINIA MEDICAL SEMI-MONTHLY.

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